

META-COGNITIVE-COMICS

An exploration of metacognition via metacomics

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Abstract

The main aim of this thesis is to investigate how metacognition might be explored via metacomics. For that aim, the study explores the analogous definitions of both concepts using a case study, based on metacognitive experiences that are expressed in a collection of comics and metacomics. These experiences are based on the author of this thesis in the context of studying in a master's program and living in Finland. The study is motivated by the idea that comics might contribute to education, particularly metacomics contributing to metacognition.

The study uses arts-based research (ABR) as the main methodology and comics-based research (CBR) as a subordinate method. The holistic approach of ABR was used to explore evocative and metacognitive experiences, and CBR was used to emphasize the exploration of principles of comics over drawing skills. In this thesis, these methodological approaches are used to focus on a theoretical exploration and not on the validation of the artistic quality of the comics itself.

The research process breaks down the definitions of metacognition and metacomics and explores their analogous components, which are awareness and regulation. In the case of metacognition, it achieves a cognitive goal and in the case of metacomics, it connects fiction and reality. In order to explore these two components, the case study was produced using two approaches of metacomics. As a result of the research process, this study suggests a model called *meta-cognitive-comics*. This model combines the definitions and components of both, metacognition and metacomics, using a metacognitive model. In addition, the components *metacomics regulation* and *metacomics awareness* are proposed. The suggested model consists of a feedback loop of information between metacognition and metacomics. This flow of information is expressed in a comic about a metacognitive experience and a metacomic about the mentioned comic. The purpose of this model is to investigate the research question of: how might metacognition be explored via metacomics?

A limitation of this study is that it is based on an individual and autobiographical case study. Nevertheless, in addition to having a strong personal significance, this study might also be relevant to the field of art education and education in general because it suggests a model to explore the possible contribution of metacomics to metacognition. Further research could be undertaken to investigate this suggestion applied in a wider context, such as with a participatory group.

Keywords metacognition, metacomics, comics, arts-based research, comics-based research

This investigation is dedicated to everyone who believes that comics might contribute to education. I would like to thank my family in Peru (and Argentina) who supported me in the crazy dream of relocating myself to the other side of the planet and explore a culture that I admire that is the Finnish culture. In Finland, I would like to thank my supervisor Kevin Tavin for his valuable feedback and infinite patience, and to the NoVA master's programme for supporting interculturalization. I also would like to thank Laura Mendoza for her English coaching and encouragement, without her help this thesis would not have been possible. Finally, I would like to thank all my friends spread around the world whose virtual company helped me on this journey.

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1. INTRODUCTION

The general idea for this thesis came from a challenge in Peru and was followed by an exploration of an idea in Finland. The challenge was the low level of Peruvian education, reflected when Peru was ranked in the last position in the Programme for International Student Assessment (PISA, 2012) elaborated by the Organization for Economic Co-operation and Development. The idea was to explore the Finnish education system as an example of pedagogical excellence, which, for example, it is, demonstrated by the country's top positions in the same PISA results (Ibid). While this general idea was clear, specific decisions developed somewhat organically via a number of events. These events constituted a transformational journey, which involved the reasons why I decided to expand my professional knowledge from architecture in Peru to study a master's in art education in Finland, and how the specific topic for this thesis took shape from investigating the use of comics for architecture to exploring my experiences in Finnish education with comics.

From architecture in Peru to art education in Finland

The initial motivations come from my back home in Lima, Peru. I studied architecture and worked in the profession until my late 20s; the work was challenging and rewarding at the same time. However, two main events motivated me to shift the way of my contribution to society. These events were a lack of prioritization of education in Peru and a number of challenges indirectly related to the field of architecture. On the one hand, from a general perspective, Peru had economic growth. However, this growth was not reflected in social welfare and social values. For example, the investment on education was low, the cases of corruption increased, and society was disorganized. On the other hand, from a personal perspective, in my career as an architect, there were a number of challenges that influenced the profession indirectly. For instance, there were cases of corruption in urban affairs and there

was a poor culture of sustainable development. These events motivated me to shift my contribution to society from the architecture perspective to a more societal and educational point of view. Consequently, I decided to search for a cultural reference outside Peru and to expand my professional studying a master's degree. Specifically, I was interested in exploring and learning from Nordic culture because in Peru it is a society known for being well organized, truthful and equal. In this way, I found the master's program Nordic Visual Studies and Art Education (NoVA) an ideal master's degree to study, as its education is developed by and in the Nordic countries.

From comics for architecture to comics for education

While studying for the master's degree, the original ideas for the thesis topic took different shapes, from investigating the use of comics for architecture to using comics to explore my experiences in Finnish education. Initially and through half of the master's studies, I focused on the possible contribution of comics to address architectural or urbanistic issues. Although, when I came back to Finland after two exchange semesters in the Nordic countries, first in Denmark and then in Norway, I realized that my cultural experiences were at that point more relevant than my interest in architectural issues. These experiences were influenced by a highly independent academic environment and took the form of independent learning initiatives that I utilized to adapt to the Finnish higher education.

Later, and after the thesis research, these independent learning initiatives are approached under the concept of metacognition and consider as metacognitive experiences. Metacognition consists of the process of awareness and regulation of one's own process of cognition and learning (Flavell, 1976; Brown, 1977). Motivated by my poor independent learning habits and organization skills, I became passionate about the idea of being able to self-regulate and learn anything independently. Metacognition is relevant for me because it helped

me to be to manage the limitations of my educational background in an independent way and to adapt myself better in the academic system in Finland. In practice, metacognition helped me to cope with weaknesses such as organizational and time management skills. These skills are now an ongoing and lifelong learning process. In addition, the metacognitive experiences that I used to adapt to the Finnish education are explored through a particular type of comics called metacomic. A metacomic is a form of comics that is aware and takes control of its fictional condition (Alter, 1978; Gonzales, 2014). These approaches lead me to the research question: How might metacognition be explored via metacomics?

Research process: an exploration of metacognition via metacomics

The purpose of the research is to investigate how metacognition might be explored via metacomics. For that aim, the study uses arts-based research (ABR) as the main methodology and comics-based research (CBR) as a specific method. In this thesis, these methodological approaches are utilized to concentrate on a theoretical investigation and not on the validation of the artistic quality of the comics. The case study consists of a collection of comics and metacomics that explores my metacognitive experiences. The production of these comics is based on my personal stories in the context of studying the NoVA master's program and living in Finland from 2014 to 2017.

I chose ABR because it is a holistic approach (Leavy, 2017b), which allows me to explore concepts from two fields, metacognition from education and metacomics from art. In addition, I chose this methodology because it is effective to evoke and explore experiences of transformation (Chilton & Leavy, 2014), because it allows to use an artistic production to generate data and knowledge (McNiff, 2008), and finally I chose this methodology because it has limitless possibilities for education (Leavy, 2017a). Based on ABR (Leavy, 2017b), in this study the aesthetic of the comics is de-emphasized because the purpose is to use the artistic

skills is to express my experiences in an evocative way, first to myself and second, to allow the exploration of the research questions, how might metacognition be explored via metacomics? The creativity is expressed in the strategy behind the comics; as a result, the comics represent reality in simple way but explore the complex relationship between metacognition and metacomics. In particular, I chose CBR because it provides criteria to elaborate a research based on comics. The craft of the comics focuses on the understanding and application of theoretical principles of comics and does not focus on the drawing skills (Kuttner, Sousanis, Weaver-Hightower, 2017). In this research, these principles are based on particular type of comics that is metacomics.

The chapter *Theoretical framework* explains the concepts used in this thesis, metacognition and metacomics, in addition, comics is also explained. A brief historical review, definitions and components are explained here. I chose metacomics because I believe the characteristics of this type of comics are analog to metacognition and they could potentially contribute to a metacognitive experience. The *Methodology* chapter describes in detail the main research method ABR and the subordinate method CBR. It explains the definitions and evaluation criteria of these methods and how they are used in the thesis. This chapter also explains the design of the case study and how I used two metacomics approaches to investigate the research question. The chapter *Case study: Meta-Limo* provides the data for this thesis and consists of a collection of 12 pages of comics and 12 pages of metacomics. The comics are organized under three themes of comics and metacomics: *Tracking time management*, *Learning adventures* and *Discovering your superpowers*. The *Interpretations* chapter investigates the research question: How might metacognition be explored via metacomics? For that purpose, I elaborated a comparative analysis of both concepts, metacognition and metacomics. I focused the attention on a seeming analogy of the models and components of

both concepts, and I used examples from the case study to suggest the potential contribution of metacomics to explore metacognition.

2. THEORETICAL FRAMEWORK

The aim of this chapter is to set the theoretical framework of the thesis. It draws upon concepts coming from two areas, (a) *metacognition* from the field of education and (b) *metacomics* from the field of art. The chapter is organized in three main sections, (1) *Metacognition*, (2) *Comics and metacomics*, and (3) *Metacognition and metacomics in this thesis*. First, the section on metacognition provides a brief historical review, the definitions and components of metacognition, as well as the current debate and limitations. Second, this section describes general and detailed characteristics of comics and metacomics. Finally, the last section consists of a summary of a selection of both concepts, metacognition and metacomics, and I briefly explain how I will use them to investigate the research question: How might metacognition be explored via metacomics?

Metacognition

In the 1970s, an American developmental psychologist John H. Flavell (1976) coined the term metacognition and defined it as the knowledge and regulation of one's own process of cognition concerning a cognitive goal, for instance for learning or problem-solving situations. For example, people engage in metacognition on several occasions, such as when they realize they have trouble learning a topic in comparison with another one, when they become aware they should double-check information before accepting it as true, or when they decide to make a reminder because they feel they may forget something.

Another researcher contemporary to Flavell was a British educational psychologist Ann Brown. However, her studies emphasized a different aspect of metacognition. Brown focused on executive processes, which were characterized by the elements of predicting, planning, checking and monitoring (Brown, 1977). Flavell focused on monitoring processes, developing a model of cognitive monitoring which consisted of a dynamic interplay between four types of

phenomena: metacognitive knowledge, metacognitive experiences, goals (or tasks) and actions (or strategies) (Flavell, 1979). Although both researchers had different approaches, their main contribution was similar that is to point out the need to fragmentize cognition in two components. They considered not only cognition as such but also focused on the knowledge about cognition. These definitions are still taken into account by recent scholars. For example Al-Hilawani summed up the concept of metacognition as “how the individual becomes aware of one’s own thinking before, during and/or after conducting specific tasks while incorporating, at the same time, the mechanisms for action and not just thinking about thinking or the thought processes” (Al-Hilawani, 2018, p. 136).

These initial definitions were inclusive and opened up a new area of investigation, allowing the proliferation of a great number of terms and components related to metacognition, such as metacognitive beliefs, metacognitive knowledge, metacognitive awareness metacognitive skills, metacognitive experiences, feeling of knowing, judgment of learning, theory of mind, learning strategies, self-regulation, metamemory, etc.¹ (Veenman, Van Hout-Wolters, & Afflerbach, 2006). On the other hand, because of the broad nature of the definition, the field of metacognition lacked cohesion; for example, the relationship and scope among the variety of terms were unclear. However, in 1996 a psychologist Thomas O. Nelson made a theoretical model as a starting point to unify the definitions and terminologies of metacognition.

The most important contribution of Nelson’s (1996) metacognitive model was to organize the components of metacognition distinguishing two levels of cognition, an object-level and a meta-level, and to use a flow of information between them. The *object-level* refers to a tactical level, what someone wants to accomplish or learn in a cognitive level, and the

¹ While these subcomponents provide important insights into the research, I will not be able to explore each of them as it is beyond the scope of this thesis. In this research I focus on two main components, metacognitive awareness and metacognitive regulation (knowledge)

meta-level refers to a strategical level, a higher level of cognition that governs the object-level, how someone can accomplish a cognitive goal. The model has three features: *monitoring*, *control*, and a *model*. Monitoring refers to a stage of informing; it is based on the flow of information from the object-level to the meta-level. It is relevant for instance to test assumptions. Control refers to the stage of regulation. It is based on the flow of information from the meta-level to the object-level. It is important for example for decision-making. The third feature called model is some kind of strategy in charge of accomplishing the goals. It is based on the feedback loop of both flows of information, monitoring and controlling.

Components of metacognition

Although the components of the definitions of metacognition differ from one author to another, there is an agreement on two main components: metacognitive awareness and metacognitive regulation (Kim, 2018). The article *Metacognition and learning: conceptual and methodological consideration* (Veenman et al., 2006) further explains these components. *Metacognitive awareness*, (also named metacognitive knowledge) involves people's knowledge of their cognitive processes. It is a prediction, and it can be correct or incorrect according to availability or lack of practical reference experiences. *Metacognitive regulation* is about procedural skills, and it has a practical feedback mechanism, where people can test if they fail or achieve their prediction. Both components inform each other via a number of feedback loops; for example, testing assumptions via failing or achieving practical skills build new awareness, but the development of acquiring skills needs time and effort. Specific components can be found in instructional material for teaching metacognitive techniques in schools (Brakke, Guillory, & Patterson, 2016), such as planning, monitoring and evaluation. Planning denotes the processes before learning something such as choosing a strategy, making predictions, and assigning time; monitoring is a real-time tracking, the awareness of the

learning performance, such as self-testing while studying, evaluating is the task after the activity when one measures the results based on the original planning and goals. In general, these three elements: planning, monitoring and evaluating, refer to stages, before (awareness), during (informing), after (regulation) learning something (Brakke et al., 2016).

Debate on metacognition

There are a number of debates that have shown the scope and limitations of metacognition. This section will focus on holistic and theoretical challenges and empirical and specific findings and limitations. Veenman and colleagues (2016) explain the discussion from the theoretical perspective. They explained that the main debate concerns on the variety of components and the nature and relationship between them. This discussion focuses on the three themes. The first theme refers to the complex relationship among metacognition and cognition. This is a paradox, which establishes that a person cannot be divided in two, one thinking while the other observing the thinker. It points out the need for a reference in the components of metacognition and that there is a complex interdependence between them. It debates the self-referenceability challenge. The second, concerns about the conscious and automatic processes in metacognition, this issue consist in the need to differentiate between automaticity and intentionality of the conscious processes. It discusses the consciousness of metacognition. The third theme discusses the generality versus specificity of the concept. This is a debate about if metacognition is general by nature and therefore transferable to various learning situations or if it is specific and it needs to be taught depending on each subject. It is about the transferability of the theory (Ibid).

From an empirical perspective, recent studies have shown the relevance and limitations of metacognition in a variety of specific settings. In education, an extensive study of learning in schools, *Strategies for student success through living, learning, and snowing self*, (Brakke

et al., 2016) has shown that metacognition is an essential skill for learning. On the one hand, the study findings revealed that the main problem was that students start college without considering their own learning practices and more relevantly that several instructors are not clear enough when explaining skills and approaches for academic success. For example, students with poor academic skills tend to be extremely overconfident on how much they understand about a subject and that being able to identify what someone knows and does not know is fundamental for decision-making in learning. On the other hand, the study indicated that years of practical evidence supported that teaching metacognitive strategies in school lessons helped pupils to be aware and take control of their learning processes and knowledge (Ibid).

In another setting, in radar training simulation, a study titled *The effect of metacognitive monitoring feedback on performance in a computer-based training simulation* (Kim, 2017) demonstrated that calibration of the monitoring component of metacognition is a key element in enhancing performance quality. In detail, the study indicated that the most common errors in calibration of judgment-of-learning are confidence-of-judgment, mainly referring to overconfidence. The research used a response-oriented technique for debiasing retrospective confidence of judgment of trainees where they got feedback about their accuracy after a task was performed. The study concluded that this feedback could lead trainees to focus on the differences among their performance and confidence and to enhance their self-efficacy. In other words, the accurate checking of learning (calibration) by debiasing self-judgment (overconfidence) improves the effects of training on learners. However, the study also concluded that there is not enough data on how to assess the breach between learners' knowledge and their performance.

Finally, in special education, the study of Yasser Al-Hilawani (2018) expanded the application of metacognition to daily-life situations and developed a method that focused on

the isolation of visual stimulus. The use of visual incentive is of interest for this thesis because utilizing images (visual stimulus) is a characteristic of comics. However, this research was limited to the assessment of cognitive capacity of people with deaf, hard-of-hearing or low verbal ability and its validity is still not clear for some researcher.

Comics and metacomics

Comics are a fundamental medium for human communication and according to some authors its origins could date back to cave paintings and Egyptian hieroglyphics (McCloud, 1993). However, there is no consensus on the definition of comics. There is no description specific and general enough to include all forms of comics (Tatalovic, 2009). Theoretical argumentations depend on the emphasis on different specific components.

An American cartoonist Will Eisner (1985), made the first compelling study of comics in his book *Comics and Sequential Art*. He defined comics as *Sequential art* and described it as “the arrangement of pictures or images and words to narrate a story or dramatize an idea” (p. 5). Later, in the book *Understanding comics: the invisible art* an American comics theorist Scott McCloud (1994) developed Eisner’s definition as: “Juxtaposed pictorial and other images in deliberate sequence, intended to convey information and/or to produce an aesthetic response in the viewer” (p. 9). Both theorists emphasized the sequence and/or juxtaposition of images and words (forming panels) and they consider necessary the use of two or more panels in their definitions (excluding single-panel comics). However, they allowed the omission of words in their descriptions (wordless comics).

On the other hand, in the study *Comics in the classroom: using sequential art to enhance literacy*, scholar Jay Peteranetz (2011) has highlighted the incorporation of words in combination with images (via conventions of comics such as speech balloons) as the characteristic that makes comics a unique medium and fundamental to literacy development.

In addition, a multidisciplinary study in the field of psychology called *Visual narrative structure* (Cohn, 2013) expanded the theory of comics to cognitive science suggesting that there is an equivalent structure between the understanding of comics and the understanding of other fields such as of language and music.

Comics have different terminologies to refer to the same concept. These terms derive from a variety of formats related to length and narrative complexity (Tatalovic, 2009), such as a comic strip for short stories (usually in newspapers), and comic book and graphic novel for longer formats. Comics are also referred according to its cultural origin. For example, comics is used in English-speaking countries; manga refers to Japanese comics and bandes dessinées to French-language comics. Another terminology comes from technological development such as webcomics for comics published on internet. In this thesis, the term *comics* has been chosen as a general way to refer to the different terminologies, in addition it follows the explanation of McCloud about how to use the term “comics” as “noun plural in form, used with a singular verb” (McCloud, 1993, p.9) for instance, “comics is a medium”. When referring to particular cases of the medium it is used in singular form, for example “comic strips”.

Components of comics

The thesis uses the components and characteristics of comics elaborated by Scott McCloud (1994) as the main reference, complemented with others authors in order to have an inclusive study. The components have been organized in two main areas. First, the "vocabulary" of comics with its components. Second, the "grammar" of comics with the relevant characteristics of the medium.

The vocabulary of comics can be understood with the following five components: Icons, panels, words and pictures, speech balloons and symbols. Icons are visual representations of everything. “Any image used to represent a person, place, thing or idea”

(McCloud, 1994, p. 27). McCloud refers to two types of icons: symbols and pictures. Symbols are images that represent abstract concepts (such as philosophies) and practical topics (such as language, therefore words are included as a type of icon). Pictures are images that resemble their subjects. This resemblance can be at different levels of abstraction. Panels are an important type of icon. They are also called frames and are general indicators of time and space. They capture what happens at a specific moment in a story (McCloud, 1994, p.99). Similarly, for Eisner panels are a way to frame time. Frames allow a sequence of events and create a flow in a narrative” (Eisner, 1985, p. 38). Different shapes of panels or absent of them set the rhythm of the stories and influence the interpretation of readers. For example, the absent of a border line in the panel (no-frame) express unlimited space.

Concerning the component of words and pictures, McCloud defends that words are not a compulsory part of his definition of comics and include them as a type of icon. However, he points out the relevant of it in communicating a story in different ways and breaks down distinct categories according to the relationship and emphasis between them, such as word, picture or duo specific, between many other. Speech Balloons are defined as "the container of the text-dialogue spoken by a character" (Eisner, 1985, p.163). This component is relevant for academics (Peteranetz, 2011) that consider the use of words in comics indispensable, specifically using the vocabulary of comics as it was mentioned word balloons, which can be speech balloons and thoughts balloons, expressing dialogue and thoughts accordingly. In addition, captions, which are text representing the voice of a narrator (author). Finally, Symbols are icons that represent things that are not visible. These can be understood as an “abstract sound-based system” (McCloud, 1994, p.131) particular of comics. These have an unlimited potential for growing, but differs between different cultures. For example, sound effects with onomatopoeias, or a “light bulb on” represents a “brilliant idea”.

The grammar of comics can be understood with two main characteristics closure and style. Closure is a fundamental distinction of comics. It is the interpretation that the reader makes when moves from panel to panel and fills the space between them. Which makes the reader a participant of the story. This space is called “gutter”. For example, when people make an assumption about what happened in an unseen scene, this is based on their imagination or background knowledge. McCloud calls transitions to the different types of closures that can happen according to the time passed and the amount of change. Style refers to the different ways to represent icons, especially the different levels of abstraction. McCloud elaborates the concept of simplification and masking. Simplification is a generalized way of representation that leads to an easier identification by a reader. Masking develops from the simplification characteristic. It refers to a phenomenon of self-identification when the readers see a simplified character and identifies it with themselves.

Metacomics

This thesis uses the study of scholar Jesus A. Gonzales (2014) “*Living the funnies*”: *metafiction in American comics strips*, as main theoretical reference. In this article, the author revises academic studies of metafiction and proposes a taxonomical framework to investigate metafictional strategies in comics, specifically in the genre of comic strips. Metacomics or metafictional comics is a type of comics that uses metafiction, a narrative technique that is utilized as well by other forms of art such as literature and film. According to some scholars, the appearance of metafiction can date back to novels such as Don Quixote (17th century) or even Odyssey and Euripides (408 B.C.). However, metafiction is usually related with postmodernism, where in the field of comics it has been a proliferation metafictional comics, for example in the form of autobiographical comics (Gonzales, 2014).

The term metafiction was coined in 1970 based on the essay of American writer William H. Gass (1970), *Philosophy and the form of fiction*, where he pointed out the need of a new term to address the increase of experimental texts of that time. According to Gass, metafiction is a form of fiction that uses its own fictional genre as a material to which other forms can be implemented. Later, Robert Alter (1978) elaborated one of the most used definitions. He refers to metafiction as a self-conscious novel that continuously shows its fictional condition and in that way explores the challenging relationship between the seeming reality of fiction and the real world. Similarly, Gonzales explains that "the key to these works of art as metafictional is that they refer both to the reality outside the text and to the text itself as a process or as an artifact" (Gonzales, 2014, p. 839). As well as in comics, in metafiction there are many terms to call this technique, such as self-conscious fiction, narcissistic narrative, or reflexivity (Ibid).

Gonzales (2014) suggested a differentiation between various degrees, instead of types of metafiction and defined the following degrees in his taxonomical framework: first degree, intertextuality and second degree: *metacomics*. The intertextuality as a first degree or level consists of "self-referential comics that provide general intertextual references to other comics or other forms of art and thus call attention to their own condition as artifice" (Gonzales, 2014, p. 840). Intertextuality is a comic that makes textual references to its own condition however still inside the realm of the comics medium or other types of art. There are two general types of intertextual references. The first one is "horizontal" references or intercomics, which are allusions to texts in other comics, and the second one is "vertical" references or intermedial references, which are mentions to other mediums of art, such as film or painting. Later, Gérard Genette (1997) suggested the term transtextuality as an inclusive terminology to refer to all types of textual references (including horizontal or vertical references) and postulated detailed forms of relations among texts.

A relevant characteristic of this degree is the notion of intermedia reflexivity (Szczepanik cited by Gonzales, 2014), a device that decompound the structural characteristics of one media in relation to another one and by so doing creates a hybrid medium that shows the features of both mediums. For instance, "the adaptation of cinematic conventions to the comic strips makes the reader more aware of the similarities and differences between both verbal and iconic media" (p. 843).

The second degree, metacomics is category that refers to a deeper degree of metafiction where comics are self-conscious and disrupt the "realistic contract" between the author and the reader calling the reader's attention to the text as an artificial creation. Gonzales uses the term metacomics based on M. Thomas Inge (1991), scholar that coined the term as self-reflexive comic strips and based his further categories on the distinction that Linda Hutcheon (1984). Elaborated on "diegetic narcissism" and "linguistic narcissism". Building on Inge and Hutcheon, Jesus A. Gonzales proposes two types of metacomics, *narrative metacomics*, and *discursive metacomics*.

Narrative metacomics is a category refers to comics that are self-aware within the world of the story narrated by the author. This form of comics is common for example as autobiographical comics, where the artist tells the story of their comics' creation. A frequent device used in this category is a "story-within-the-story" (from French term *mise-en-abyme*), a strategy where a character narrates inside the narrative a reproduction of a miniature of the story inside the story. In the case of comics a "comic-within-the-comic" (Ibid).

Discursive metacomics indicates to an even deeper level of self-referentiality. Here the comics are aware of how the story is told (by the author). The comic shows the "building blocks" of their fictional world and/or they are also conscious of the limits and powers of this world. Characters and/or author interact with each other and they can take control of the story, showing and "breaking" the conventions of the medium. This interaction also happens

addressing the reader, breaking the “realistic contract” between the author and the audience (Ibid).

Gonzales (2014) explains a variety of versions of discursive metacomics according to different levels and combinations of awareness and interaction between the characters, the author and the readers. The first version is when the characters that become aware of their fictional nature. Here the characters make a discovery of their own identity, for example, when a character realizes that it cannot have a social media account because it is part of a fictional creation. Then characters that interact with the reader and with the author. When the characters address the audience, it refers to a strategy known as “breaking the fourth wall” which is frequently used in theater. When the characters interact with the author, they can even become the author and take control of the story, for example drawing themselves. Another version is when the author interacts with the story. This interaction can happen with or without the visual representation of the author. For instance, the author can appear inside the comic as a character or characters can talk with the narrator (the author).

The next version is called radical metafiction (or metafictional overkill). This type refers to a combination of the previous mentioned metafictional devices (different types of interactions between the characters, the author and the reader). For example, a character can interact with the reader, become the author, and converts the reader into a character. The Interaction with the conventions of the medium is another version; this includes showing or playing with the vocabulary of the comics medium, such as icons, panels, speech balloons, symbols or even reading order. For example, when a character tells the reader that the comic should be read from right to left as in Chinese tradition (instead of from left to right as in Western tradition). The last version refers to the interaction with conventions of subgenres of the medium. This form is a step further that involves not only playing with the vocabulary of the medium but also for example with the production and postproduction of the comics medium.

For instance, when a character complains about the printing process. The author points out that the boundaries between the subcategories of narrative and discursive metacomics are not always easy to delimitate. Concerning the purpose of metafiction in comics, Gonzales (2014) suggests that the most important functions are reflection, self-parody and experimentation; and specifically in the case of (American) comic strips, it appears that the main function is parody. Humor is always the goal in metafictional comics (Gonzales, 2014).

Finally, Gonzales built on Matthew T. Jones (2005) quote "by laying bare the mechanisms of the production process; the author provides an avenue for the audience to make sense of what they are consuming within the context of authorship" (p, 270). Gonzales explains that when the realistic contract is broken it destroys the realism of the medium and paradoxically it usually produces a realistic effect by setting a closer connection between the audience and the real author. In that way, Gonzales (2014) proposes the term *metafictional realism*, which could be understood as the "realistic effect" of a close connection between the author and the reader produced by exploring the relationship between reality and fiction using metafictional devices.

Metacognition and metacomics in this thesis

Now I turn to explain how I use the concepts of metacognition and metacomics for theoretical framework of this thesis. For that purpose, from the detailed explanation, I selected the main definitions and components that I will use in order to investigate the research question how might metacognition be explored via metacomics?

With concern to the concept of metacognition, I use the initial and general definitions of Brown and Flavell in combination with Nelson's model. This definition consists of becoming aware and taking control of one's own process of cognition for learning or problem solving with the help of a learning model (Brown, 1977; Flavell, 1979). This model is based

on a self-referential feedback loop between practice and theory (Nelson, 1996). Between a variety of components and subcomponents of metacognition, I consider the two main components of metacognition *awareness* and *regulation*. (Veenman et al., 2006).

Due to the case study is based on both, comics and metacomics; I explained the definition of comics to have a general understanding of the concept. The specific components of comics allowed me see the great possibilities for future research. However, in order to explore the research question, this thesis focuses on the specific type of comics, metacomics. For metacomics, I use the taxonomy and concepts elaborated by Gonzales (2014). I selected the two main degrees (or types) of metacomics, narrative metacomics and discursive metacomics. The first consist of a comic aware of its fictional condition and the second one takes a step further and control this fictional condition by interacting with an author or audience (Ibid). I selected these two types of comics because I believe they can be related to the analogous concepts of awareness and regulation in metacognition. In the *Interpretation* chapter, I further elaborate these concepts in a comparative analysis, and then I propose a theoretical model that connects both metacognition and metacomics. The aim of this model is to explore how metacognition might be explored via metacomics.

3. METHODOLOGY

In this chapter, I describe the principles and evaluation criteria of the general methodology ABR and then the subordinate method CBR. After that, I explain the design of the case study, where I elaborate on how I use the criteria of ABR and CBR in combination with the concepts of the theoretical framework to elaborate two approaches for the making process of comics in the case study.

Arts-based research

I became familiarized with arts-based research (ABR) while studying the NoVA master's program. In the beginning, it was challenging because I come from a background in architecture, where in my experience a quantitative approach is always combined with a qualitative method. However, ABR was an opportunity to learn and explore a new way of investigation. I chose ABR because it is a holistic approach (Leavy, 2017b) and an effective method to evoke and explore transformative and metacognitive experiences (Chilton & Leavy, 2014), because it uses an artistic production as a process for generating knowledge (McNiff, 2008), and because it has infinite possibilities in terms of education (Leavy, 2017a).

This research is mainly based on the studies made by Patricia Leavy about ABR (Ibid). Leavy elaborates a general introduction of the relevance of art, explaining that, at its best, it produces instant and permanent impressions, and thus limitless possibilities to educate. She explains that on the field of research in order to develop new insides and answers we need to ask new questions and take new approaches. Consequently, arts-based research constitutes a new approach, in which a researcher combines the practices of the arts and science.

The author (Ibid) defines ABR as a transdisciplinary method that combines the principles of arts in research settings in order to create knowledge. This methodology approaches an investigation holistically and uses artistic tools during any or all of its stages.

ABR uses the actual artistic production as a process of meaning making for both the investigator and the people involved in the research McNiff (2008). The art works involve a variety of art forms, such as literary, performative, visual, audiovisual, multimedia and multi-methodological forms. ABR is based on the assumption that art can generate and express meaning through aesthetic knowing. This notion refers to the stimulation of reflexivity and empathy in the researcher and spectator via the aesthetic of an artistic production itself (Leavy, 2017a). Following Leavy's terminology, this thesis uses the term arts-based research as a general category to englobe a number of terminologies that exist to refer to any research that uses art a methodological approach.

Chilton and Leavy (2014) provide a framework with which to analyze the strengths of ABR. At its best, ABR aims to produce synergy combining various disciplines, methods and theories. Second, it evokes and explores metacognitive experiences. It expresses and discovers experiences difficult to convey via traditional scientific methods. It does it because it offers access to inner experiences, it forms a medium to deep knowledge with oneself and with others, and it explores meaning further than the expressed verbally (meta-verbal), which is useful for empathy and transformative reflection. Third, it promotes ethical and social justice. The practices of ABR generate consciousness of injustice and repression. It does it by fostering participation and empowerment of an oppressed individual and/or collective. Finally, it constitutes an innovative dissemination practice. In comparison with traditional means of communicating, art connects better with an audience because evokes empathy and unique emotional responses. This research focuses its attention to the characteristics of holistic and transdisciplinary approach and to evoking and exploring metacognitive experiences.

ABR has been recently under debate concerning if this methodology is a paradigm on itself or if it pertains to a qualitative paradigm. Leavy prefers to understand ABR not by explaining what it is not, but focusing on a discussion of the qualitative practice based on its

own merits (Chilton & Leavy, 2014). Neilsen, (cited by Leavy, 2017a) understands ABR as it is its own paradigm, because it suggests that it is based on a groundless theory, opposite to a grounded theory used by some qualitative methodologies.

Recently, Leavy (2017a, 2017b) explains the evaluation criteria for ABR. I will describe these principles and explain how I use them in the research. The author proposes a general framework according to seven categories; these principles are *methodology*, *usefulness*, *public scholarship*, *audience response*, *aesthetics or artfulness*, *personal fingerprint or creativity* and *ethical practice* (Leavy, 2017b, p. 577).

First, *Methodology* refers to if the approach is holistic and synergistic. It considers the overall congruency and consistency of the use of the artistic practice in the process of the investigation; this congruency is understood in ABR as the strength of the form. It includes the concept of translation, which refers to moving from one genre to another one, for example from images to text. It also includes the idea of transparency or explicitness, which refers to showing the making process. This thesis aims to be holistic and create synergy between concepts from two different fields, metacognition from the field of education and metacomics from the field of art. The congruency of the artistic work in the research is considered using a case study based on comics to investigate the research question of the thesis. The principle of translation is used when, in the *Interpretation* chapter, I developed a graph as a link between my interpretations written on texts and visual examples from the case study.

Second, *Usefulness* refers to the importance or substantive benefit, for example if the work makes a difference and illuminate an area of knowledge. It does not consider if a piece of art is good; instead, it focuses on what the piece of art could be good for. This usefulness contemplates if the work enlightens, teaches, transforms or liberates. Concerning the usefulness criteria, this research is significant to myself and potentially to people in a similar situation and to the field of art education. It is useful to myself because the exploration of my transformative

experiences were educative. Eventually, it could also be useful to others in a similar situation, for example international students. In addition, it could be meaningful for the field of art education and education in general because it provides suggestions of how metacognition might be explored via metacomics.

Third, *Public scholarship* involves the accessibility of the study to a broader audience other than the academia and to the inclusion of a participatory approach. On the one hand, this thesis is based on an autobiographical approach and not on a participatory one; therefore the study is limited to having only the author of the thesis as participant. On the other hand, with respect to the accessibility to an audience, the thesis has the potential to be shared with a wider public. However, the aim of this study in a first stage is limited to be personal and academic exploration.

Fourth, *audience response* consists of asking feedback in an audience and promoting multiple meanings. With this respect, the scope of this thesis is, as explained previously, an individual exploration and for this reason, the audience and feedback are limited to my self-reflections. On the other side, multiple meanings were fostered when the metacomics of the case study allowed multiple reflections about my experiences.

Fifth, *Aesthetics or artfulness* refers to how well the art evokes an intended response in a real-life audience. The artfulness depends on one type of art, genre, to another type. In this thesis, the genre of art is comics. These comics are simple but effective; they evoke a desire response in myself as an audience when they made me reflect and learn about my experiences in Finland. This response can be specially noticed in the second round of comic, the metacomics, which are comics that reacted upon the first comics.

Sixth, *personal fingerprint or creativity* involves the personal voice of the artistic works. ABR promotes finding and expressing the voice or style of an artist. From an aesthetic perspective, the style of the comics is simple and uses a grey scale; the format is short (one to

five pages); and they are autobiographical in the comics and metafictional in the metacomics. From a creative perspective, I consider that my personal style is the strategy behind the comics. For example, there is always a purpose of learning about how to cope with difficulties in both the comics and the metacomics. In addition, and as a secondary characteristic, there is also some humor in the stories.

Finally, the seventh criteria is the *ethical practice*. This consists of taking care of the cultural representations via using multidimensional characterizations, protecting the audience in public performances, protecting the members of a participatory work, balancing the truthfulness in the artistic license, and being reflexive by examining the position of the artist itself (Ibid). As explained before, the case study does not consider an audience or participatory performance, rather the author's self-exploration. About the honesty of the artistic license, on the one hand the comics have some level of truthfulness because they are based on my real-life experiences. On the other hand, the metacomics have a level fiction and liberty (although they refer to the real-life comics). The reflexivity was considered in all the comics stories but especially in the metacomics because they reflect and promote awareness. In addition, McNiff (cited by Leavy, 2017b) clarifies that skills that a practitioner of ABR needs should not be fixed because ABR necessitates creativity and novelty and that even when specific skills are required in a project, practitioners can still start from where they are, learn as they go and progress in time. ABR does not focus on a fixed set of artistic skills, rather in the process and creation. With concern to my level of skills when I made the comics, this was a slow learning process, although it was satisfying.

Comics-based research

ABR involves a variety of artistic practices and each genre requires assessment based on specific principles suitable for the approach of the particular genre (Leavy, 2017b). Because

the case study consists of comics, I chose the subordinate method of ABR, comics-based research (CBR) as a specific methodology for this genre. In this section, I explain the definition of comics-based research and the principles and issues that CBR needs to consider in an investigation. I will go back to these principles in the design of the case study to explain how I use them.

In the book *Handbook of Arts-Based Research* (Leavy, Ed. 2017b), scholars elaborated a chapter explaining how to use comics to create research in academia. They refer to *comics-based research* (CBR) as “a broad set of practices that use the comics form to collect, analyze, and/or disseminate scholarly research” (Kuttner, Sousanis, Weaver-Hightower, 2017, p. 397). They explain that the procedure of comics making can be essential for gathering and analyzing data and that comics can offer a potent means for illustrating studies in an effective and flexible way. These scholars incentivize the use of comics as means for research.

The authors proposed a number of affordances of the genre, principles to understand how the meaning is produced in comics. These principles coincide with concepts of comics, which most of them I already considered in the *Theoretical framework* chapter, and for this reason, here I explain a selection of two principles that scholars suggest is needed to be considered in CBR. The *unification of word and image* (Kuttner et al., 2017, p. 398) is a principle that the authors explained as a cyclical process or interdependent relationship from text to image and from image to text. They described that this principle can be used in research as a tool for the exploration of other types of relationships, such as between theory and practice, objective and subjective, multiple interpretations, etc. I use this principle when I make a comparative analysis of the *Interpretation* chapter and I explore the relationships between principles of metacognition and metacomics using examples from the case study. Another principle is the *facility with narrative and process*; this refers to the concept of closure, which is the space between panels and where readers make their interpretations (McCloud, 1994).

The scholars also explain the key issues, challenges, which implies a CBR. These issues are already considered using the general method of ABR, in that sense here I focus on particular issues of CBR that concern to my study. These matters refer to the validation and quality of a CBR, specifically *understanding of comics craft* and *cognitive and emotional impact* (Kuttner et al., 2017, p. 413). The authors explained that in the “understanding of comics craft” (Ibid) what it is important for a researcher of a CBR is not the drawing skill, rather how the practitioner understands and uses the principles and conventions of comics for academic purposes (Ibid). In my case study, my drawing skills are enough to express my stories but not the focus. Rather, I concentrate on the concepts of comics, and specifically of metacomics, to explore the research question. The “cognitive and emotional impact” (Ibid) refers to the capacity of comics to communicate in two ways, objective and subjective. Comics can be a logical and clear way of communication and at the same time, comics have a great capacity to communicate subjective emotions. The scholars recommended that CBR practitioners should explain their approach to these two types of communication. In the comics of the case study, there is a combination of both types of communication. There are cycles of objective and subjective reflections between real-based comics and fictional metacomics. Ultimately, they are both interconnected by a process of reflection.

Design of case study

The case study of this thesis uses ABR as the main methodology and CBR as a specific method. This case study consists of a collection of comics and metacomics that are based on a personal exploration my encounters while studying a Masters in Finland. The aim is to use these comics in combination with the theoretical framework, metacognition and metacomics, to investigate the research question: How might metacognition be explored via metacomics?

Drawing on the general criteria of ABR (Leavy, 2017b), here I explain the general framework for the case study. The purpose of the general method is to be holistic and synergetic, to do that the case study combines concepts from the field of education, metacognition, and from the field of art, metacomics. The utility of the study, the usefulness, is first to myself because it is an exploration of my transformative experiences in Finland. Then it could be meaningful to others in a similar situation, such as international students, and finally it could be useful to the field of art education as it provides suggestions on how metacognition might be explored via metacomics. The accessibility and response of a broader audience is a limitation because the scope of this thesis is a personal exploration of my experiences. However, the academic investigation of metacognition and metacomics can potentially be shared. The aesthetic quality or artfulness of the comics is considered evocative enough to promote a reflective process in myself, and to allow the investigation of the research question. The fingerprint or creativity of the comics works can be described as simple drawings in a short format and with some humor. My personal voice and creativity are expressed in the strategy behind the comics making. The truthfulness of the ethical practice in the case study consists of a combination of comics based on real experiences and metacomics that explore metafictional techniques, where in both cases the aim is to be reflective. Finally, with regard to the artistic skills, the style of drawings aims to be a simple representation of reality able to communicate my stories in an enough evocative way. The style is a balance between abstraction and reality.

Now a turn to provide the specific criteria from CBR (Kuttner et al., 2017) that I use in this case study. The combination of text and pictures is used to explore relationships between principles of metacognition and metacomics. For example, the text might be related to processes of metacognition and the pictures with processes of metacomics. However, this relationship is complex because all of these concepts are interconnected. The principle of closure (McCloud, 1994) is understood as the space for interpretation between the comics and

the metacomics. However, this study focuses on the concepts of metacomics. The topic of the comprehending the craft of the comics is utilized when I concentrate on the theoretical concepts of metacomics to explore the research question, rather than on the drawing skills in itself. The issue of mental and emotive impact is used through a combination of objective and subjective communication, which is expressed in cycles of reflections between the comics (real-based) and the metacomics (real and fictional based)

Production of comics

The production of comics for the case study consists of a collection of three groups of comics and metacomics. The comics tell stories based on my real-life encounters in Finland and the metacomics explores metafictional techniques to reflecting about the previous comics. In detail, the theme of the comics is inspired on my personal experiences of adapting to the Finnish higher education system, specifically in the context of studying in the Master's program Nordic Visual Studies and Art Education (NoVA). These experiences happened in a lapse of time between autumn 2014 to autumn 2017. These themes focused on specific and isolated moments that I was fascinated about, rather than an overall narration of my student life. These topics include my encounters with the Finnish academic culture, how to cope with difficulties, and independent initiatives on strategies such as organizational skills and time management. These topics are taken under the lens of metacognition and understood as metacognitive experiences. The case study is called *Meta-Limo*. "Meta" refers to the use of metafictional technique in comics, metacomics. "Limo" is my name, the researcher of this thesis, in comics' version; this name was inspired by my city of origin, Lima, turned into masculine version. The story of Meta-Limo consists of my learning experiences in Finland. A characteristic to highlight is that the main character (Limo), the author, and the reader audience is the same person, myself as the investigator of this thesis.

The creation process of the comics consisted of: first, I selected experiences concerned me, and I made notes and sketches. Then, I drafted this information in a sequence. In the case of digital comics, the text was written in a computer. Finally, I made drawings on pencil, inked, scanned and edited in an image processor (Photoshop). The elaboration of the metacomics was similar; however, it utilized the previous comics as reference.

The comics works were made in two phases. First, comics were drawn in autumn 2016 and spring 2017. Second, metafictional comics referring to the first comics were made in autumn 2017. Therefore, the period between the comics and the metacomic is of scope of six to twelve months. The combination of the comics and metacomics has been grouped into three themes: *Tracking time management*, *Learning adventures* and *Discovering your superpowers*. There is total of 24 pages of drawings, 12 pages of comics and 12 pages of metacomics. These works included handmade and digital works.

The comic of *Tracking time management* narrates how I tried to manage one of my biggest weakness, which is my poor management of time. This weakness became really evident in an organized society as it is the Finnish one. The comic *Learning adventures* tell short stories about my academic encounters. Here I tell about how I managed disciplined issues and my impression of the academic environment. The last comic *Discovering your superpowers* tells about how I motivated myself when I had a part-time and non-professional job.

Two metacomics approaches

In order to explore the research question of how might metacognition be explored through metacomics, the study has used two different metafictional approaches. These approaches are based on the taxonomies of metafictional techniques suggested by Gonzales (2014), *narrative metacomic* and *discursive metacomic*. Narrative metacomic addresses the *awareness* component of metacognition and it is used in the metacomic *Metacomics of tracking*

time management. Discursive metacomic addresses the component of *regulation* in metacognition and it is used in the works *Metacomics of learning adventures* and *Metacomics of discovering your superpowers*.

Both metafictional comics were reflective and explained the "behind-the-scenes" or how the comic was made, for example, the character told the author's motivations and thoughts and made retrospective comments and reflections. However, each approach of metacomics had different characteristics. The narrative metacomic was more rational, serious, conservative and reflective. About the drawing style, the character appeared with a formal look, with a jacket and shaved. In this metacomic, the character explained about the other comic and did not interact with it, other than making reflections, whereas the discursive metacomic was more emotional, humorous (self-parody), experimental and self-reflective. Concerning the drawing style, the character was presented with an informal look, sweater and beard. In addition, a second character appeared. In this metacomic, the character not only reflected about the other comic but also interacted with it by playing with the comics conventions, the panels and the characters.

The next pages present the collection of comics based on the following paired groups of comics and metacomics: *Tracking time management*, *Metacomics of tracking time management*; *Learning adventures*, *metacomics of learning adventures*; and *Discovering your superpowers* and *Metacomics of discovering your superpowers*.

CASE STUDY: META-LIMO

an exploration of metacognition via metacomics

CONTENT

Comic: Tracking time management . 1 . Metacomic of tracking time management

Comic: Learning adventures . 2 . Metacomic of learning adventures

Comic: Discovering your superpowers . 3 . Metacomic of discovering your superpowers

COMIC: TRACKING TIME MANAGEMENT



LATE IN RECOVERY

ONES UPON A TIME
LIMO WAS...

JOGGING?



HE TRIED ALL POSSIBLE TIPS AND TRICKS,
BUT NONE OF THEM WORKED.

TILL ONE DAY
LIMO FOUND SOMETHING



AS OUR UNDEATABLE
'HERO' ALWAYS SAYS





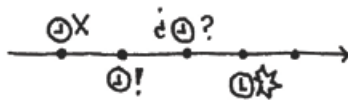
METACOMIC OF TRACKING TIME MANAGEMENT

WHY THIS TOPIC?

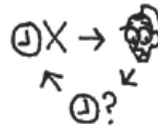
Tracking Time Management is a collection of independent comics about a personal flaw, my time management issues. There were made in formal and informal settings. The size varies from a one panel to three pages, having seven comics at total.

From these comics, I chose to expand and reflect about the longer one: "Late in Recovery". The next page shows a general explanation of each comic. After that, the behind-the-scenes of the comic, were I explain the making process and make reflections.

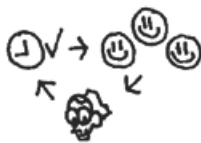
I choose this topic, because two reasons. First, I found it recurrent in all my drawings. Enough frequently that I was able to track them almost entirely through my autobiographical timeline.



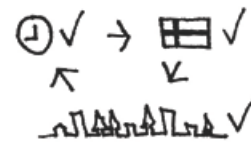
Second, because I consider this matter one of my biggest weaknesses (which is quite common in Peru, my country of origin), and because it is an issue I wanted to tackle all my life.



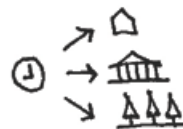
The relevance lies on two aspects; from an individual perspective, managing this subject allows me to perform better in any aspect of life, be organized and effective, have respect for other people and ultimately be happier.



From a societal perspective, this is one of the values that I most admire from Finland. The capacity to relay on time frameworks, characteristic that shapes a well-organized culture.



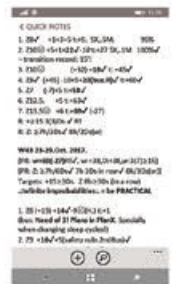
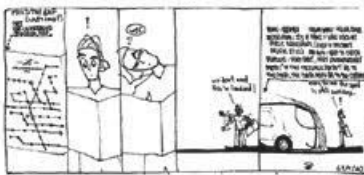
I like to call these principles "meta-skills", skills that are prerequisites to other skills. For example, people can apply time management to any area of their life for personal, professional or recreational purposes. Other examples of "meta-skills" could be self-discipline, self-awareness, between others.



I use a timeline to organize the comics in three groups, as if they were chapters of an autobiographical comic book. Then, I named them according to the stage of evolution of the topic, as; encounter stage, learning stage, and adaptation stage. On the bottom, I wrote short reflections of each group/stage.



This is a picture of how, now days, I track my time using notes on the mobile. I believe this was influenced by drawing the comics.



AUTUMN 2014

Encounter Stage:

- Combis in Limaland.
- Bus stop Fin. and Per.
- Bus stop winter.

In the first stage, I express my first encounters with the subject. Humor, a parallel comparison and a fictional solution were use.

AUTUMN 2016 - SPRING 2017

Learning Stage:

- Adventures of timetables
- Late in recovery
- Timer-Man (Chosen comic)

The second stage is about how I dealt with the problem, a personal learning process. Here I tried out a few *comics methods* of my own exploration: "Learning Cycle Scripts" (L.C.S.), "Even if Comics" or "Quote Comics" (Q.C.) and Problem Solving Comics (P.S.C.)

AUTUMN 2017

Adaptation Stage:

- Finnish Quarter

The third stage is a short comics reportage using self-reflection.



The comic "Late in Recovery" has two goals. One is to work as a reminder of a positive learning experience. And, the other one is to test a method of my own exploration, which I call "Even if" comics, as part of "Quote Comics". It was inspired on an article I read about how to deal with procrastination. I tested it in real-life and made a comics version of it.



The making process was an extension of "P.B.C." (Problem Solving Comics) from a comic strip of three panels to a comic of three pages. The first page shows the problem with humor (now a classic joke). The second page, presents a founded "solution". And a self-reflection with an ironic touch, as ending.



I made this comic in a comic's course I took in spring 2017, as part of my teaching training at the Comics Center in Helsinki. The course is called "My Story" autobiographical comics, and it is held by Kaisa Leino.

At the lesson, we were given prompts. But I took the chance to explore my own storytelling methods. So, I followed some of the instructions and combined them with my ideas and make my own version. For the topic, I chose: how to deal with a personal weakness, the lack of sense of time or poor time management skills.

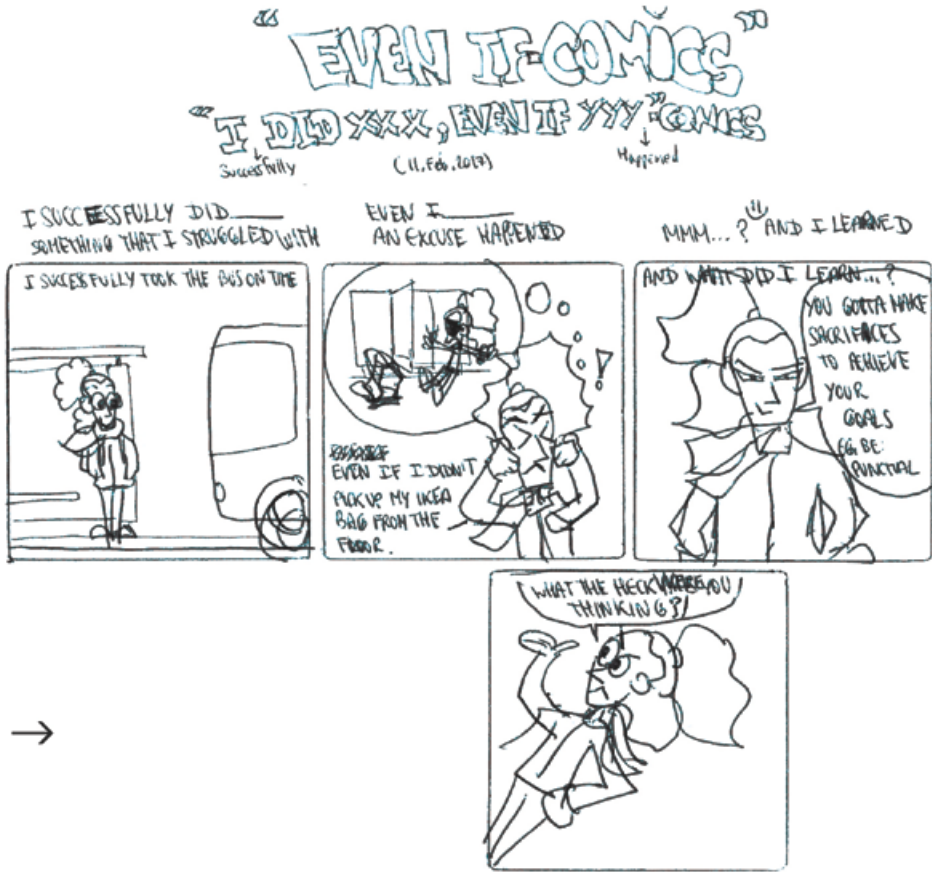
The "solution" part of the comic was trigger by a real-life experience. By that time, I was reading an article online in the BBC news, about how to deal with procrastination. The author recommended replacing the word "but" by "and", she argued "but" denotes an excuse, instead using "and" denotes the acceptance of a challenges and just doing any task regardless of the difficulty. I made my interpretation and preferred to use the expression: "even if", also inspired by the expression "what if", referring to an ideal future.



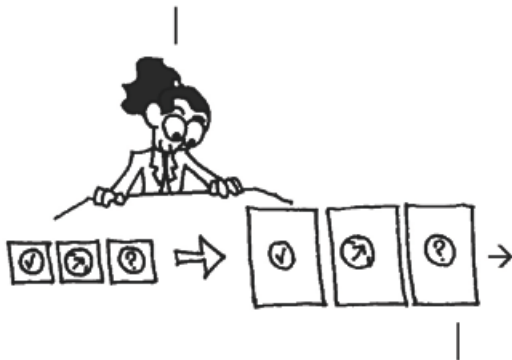
This is the first draft I did. Here we can see the original idea as a comics' methodology. This was to make a three-panel comic strip answering the quote: "I successfully did (fill in), "even if (a difficulty) happens". So, in the first two panels, you draw something you achieved "even if" a challenge happened. And in the third panel, you draw what did you learn.



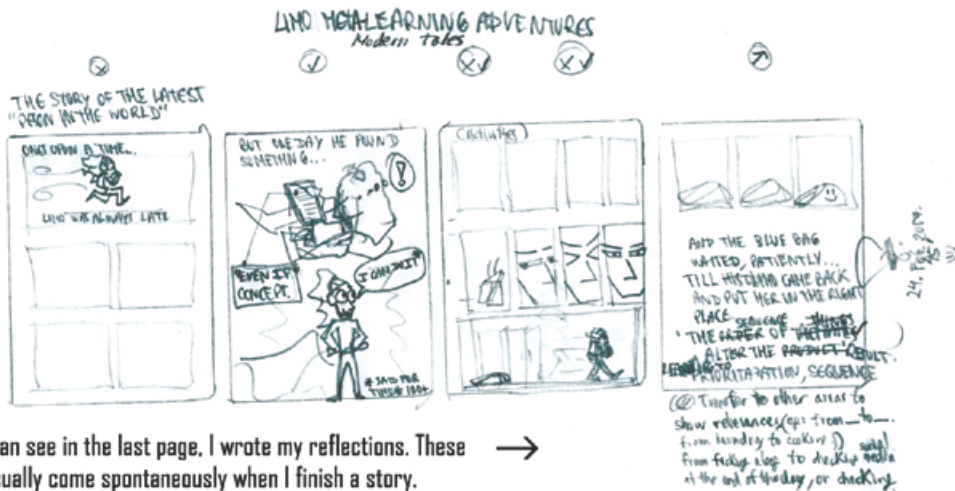
Then, I added an extra panel as a way of self-reflection. That was a glance for the next method, a meta-comic, a comic reflecting about the same comic (more about that in the comic : "comic methods")



In the second draft, I extended the comic strip to a larger three-page comic.



As we can see in the last page, I wrote my reflections. These usually come spontaneously when I finish a story.





I drew my face sort of angry and focused, because I sort of feel that I go again my weird bad habit, waiting until the last second to prepare everything, which actually make me laugh :D

Even if, I manage to leave on time. It seems like if my radar is tracking any excuse to make me don't leave on time (perhaps it is common in visual people like me). In this case, it was a laundry bag, but it could have be anything.

Now days I "procrastinate" on purpose, so I allow myself to leave a little mess in my room in order to just leave! It actually releases some stress :) (Now I called this "prioritizing"!).



"Sometimes you need to make sacrifices" this expression came out of nothing, and now that I see it, I connect that with the thought: saying yes to something means to say no to something else.



Later on in real-life, I also noticed that some things could be prepared in advance. In order to, for example keep a bag on its place (obviously!). So, that's what I try to take care of now. "Anticipation" is everything I might say.

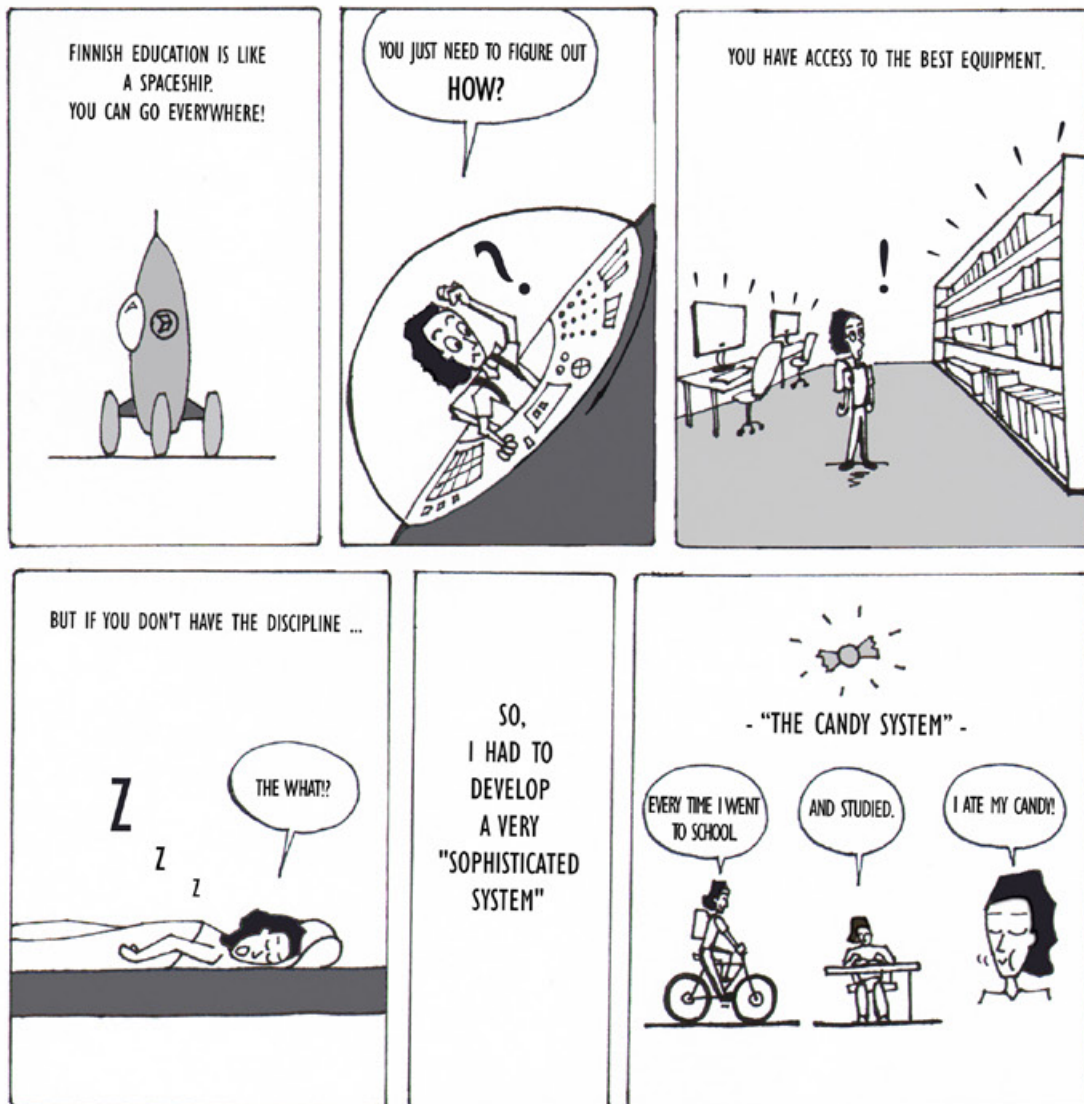
In this example, it seems a little detail, but applied to a more important task like a job project, it could be everything. "...Preparation meeting opportunities..." is other expression that comes to my mind.

COMIC: LEARNING ADVENTURES



LEARNING ADVENTURES #001

THE SPACESHIP



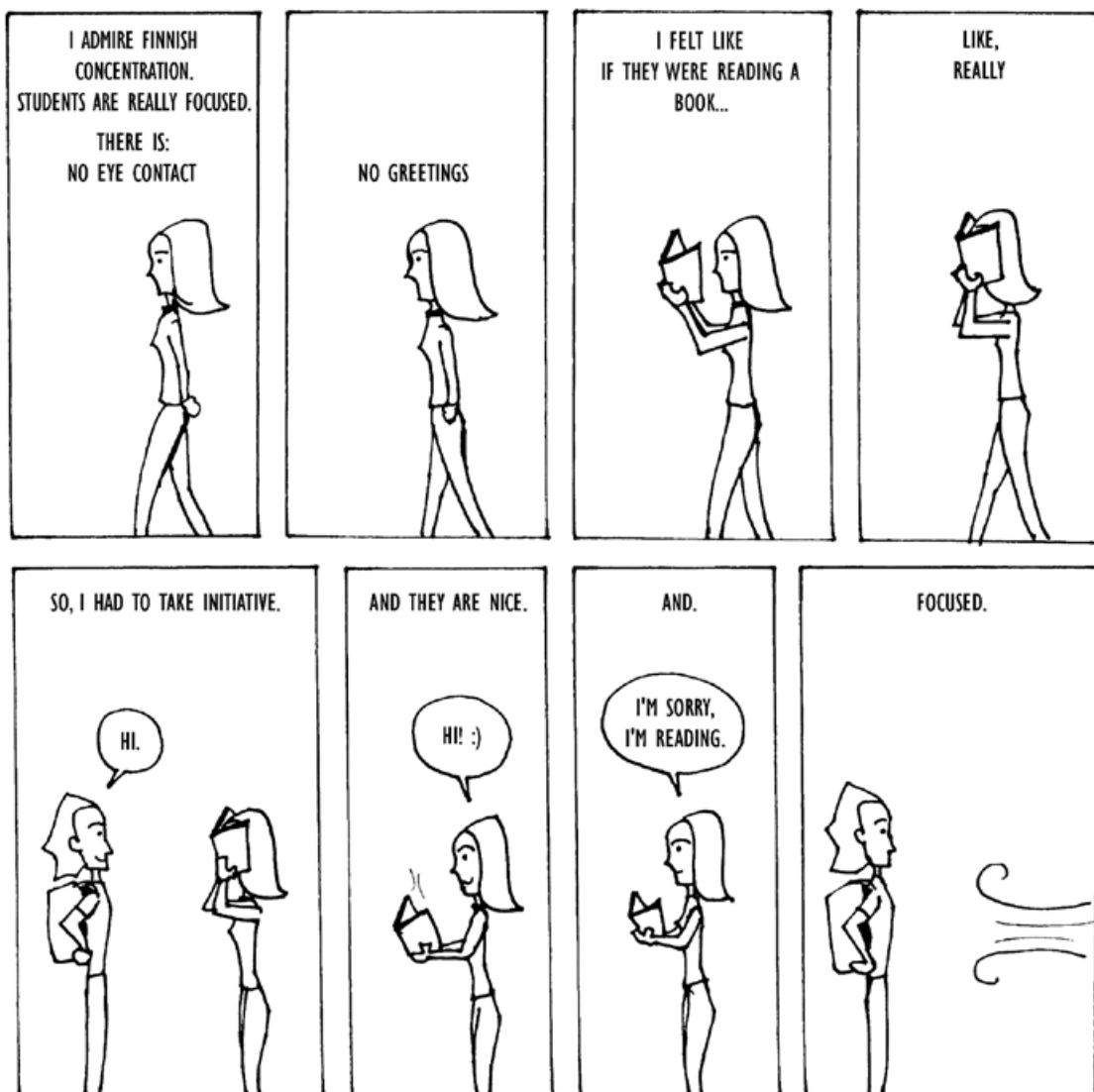
LEARNING ADVENTURES #02

INDEPENDENT LEARNING



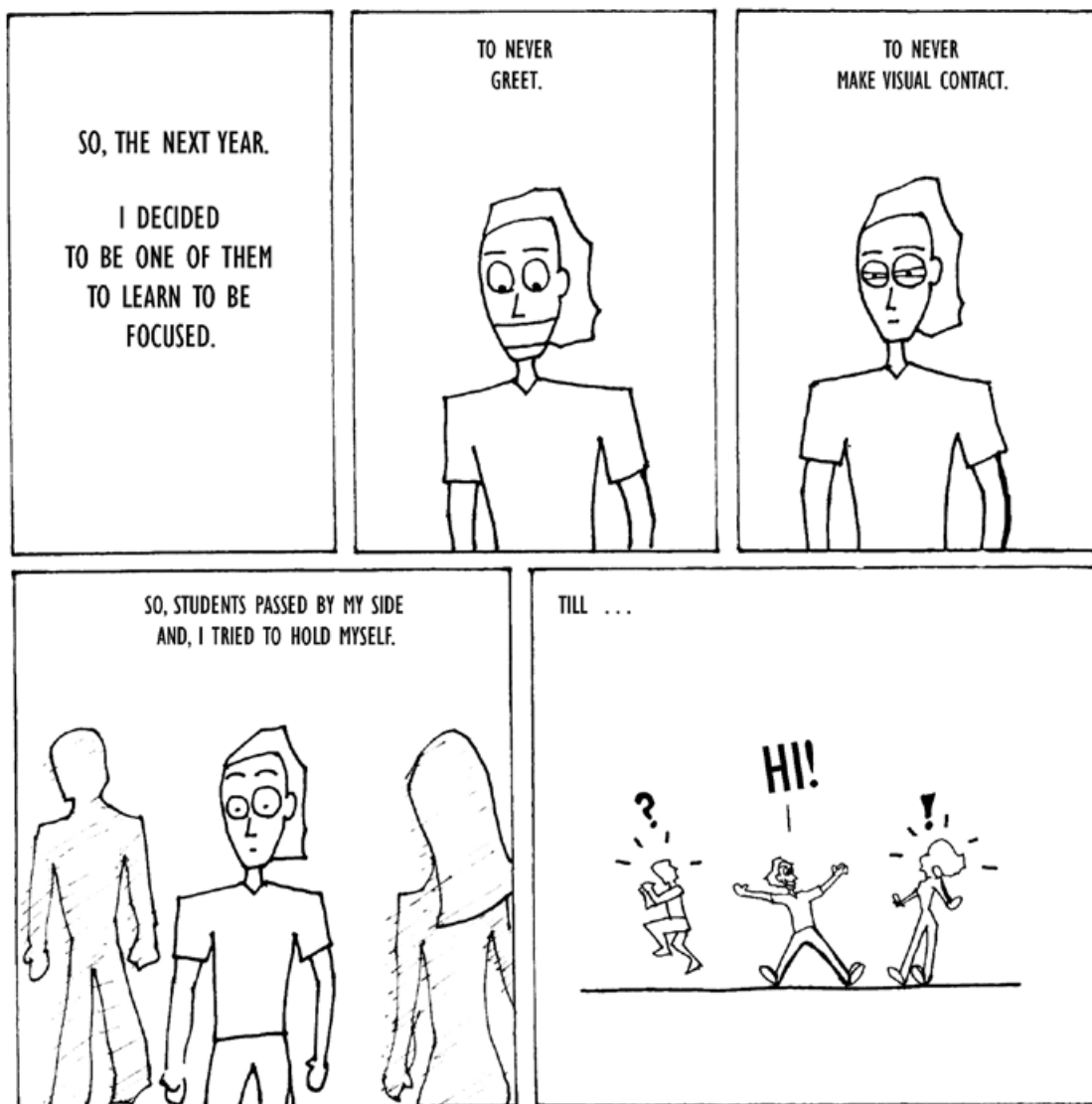
LEARNING ADVENTURES #03

FOCUSED



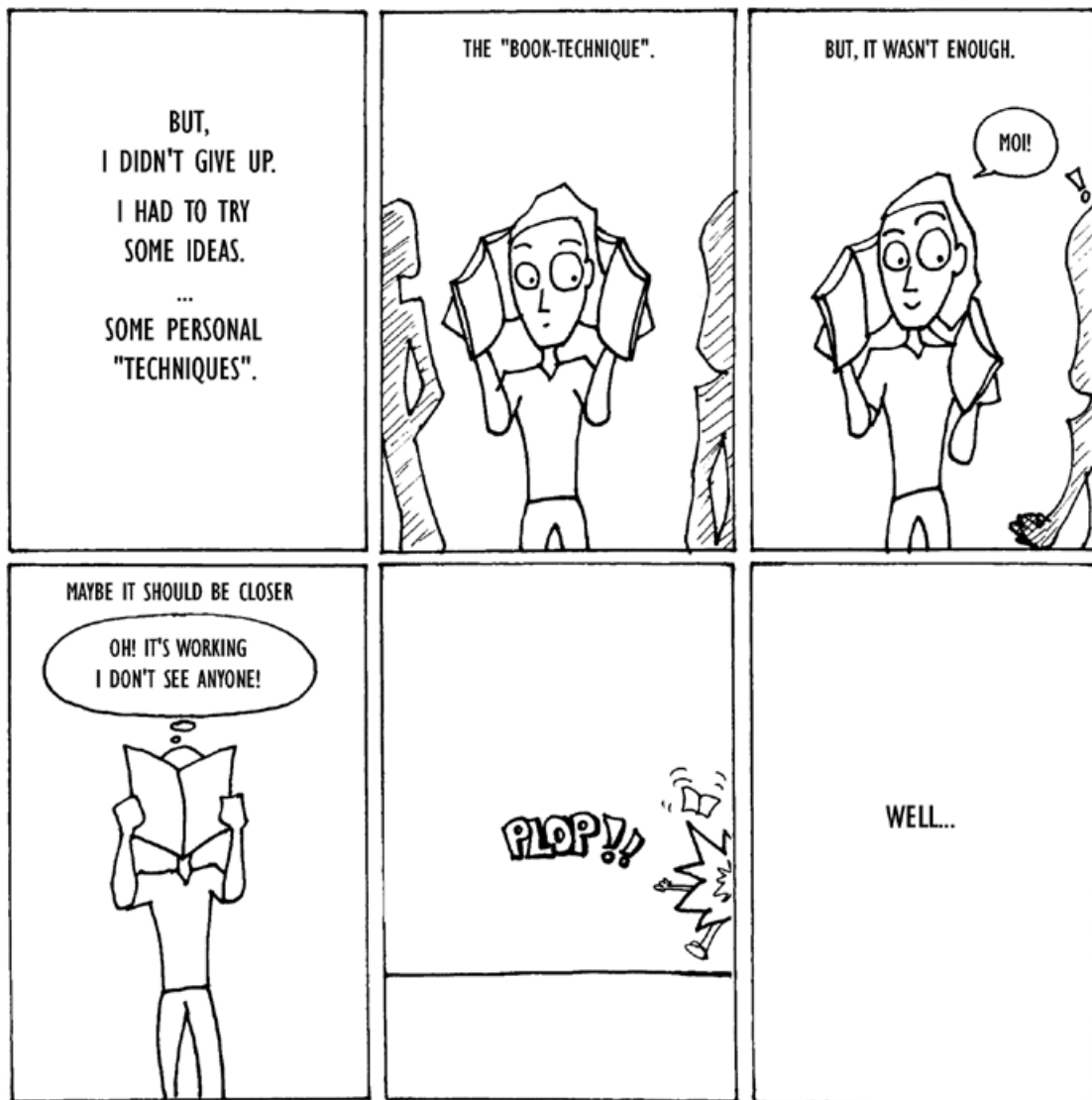
LEARNING ADVENTURES #03.1

LEARNING TO "WALK FOCUSED"



LEARNING ADVENTURES #03.2

"WALKING FOCUSED" - THE "BOOK-TECHNIQUE"



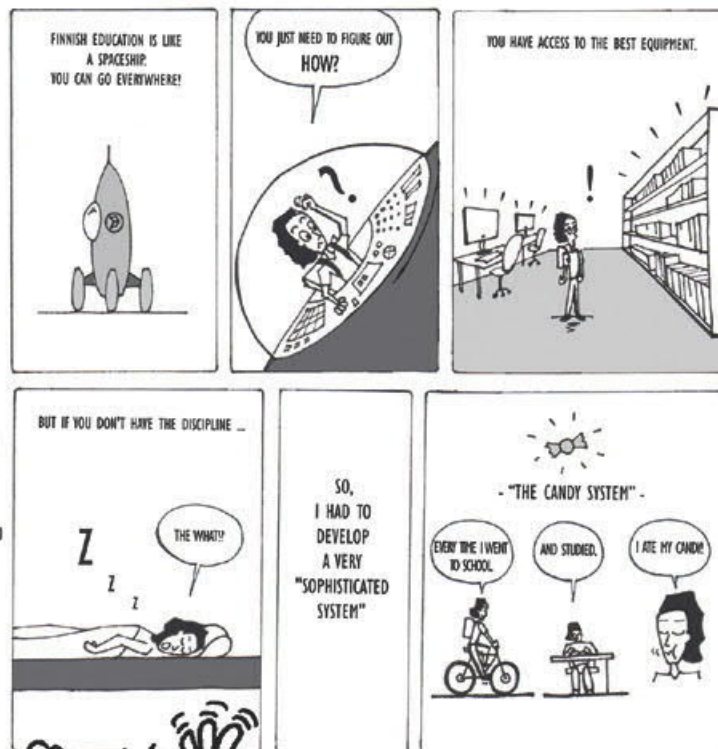
METACOMIC OF LEARNING ADVENTURES



This is a series of five-page comic. I titled it Learning Adventures. Some comics are a one-page comic and some have continuity. I was exploring the idea of making a joke about how I learn something. Something I like to call, "smart jokes". So I brainwash myself with a positive memory.

LEARNING ADVENTURES #001 THE SPACESHIP

I did this one as a summary of my impressions about the Finnish educational system (in the environment of studying a master). It shows one of my first challenges and how I dealt with it.

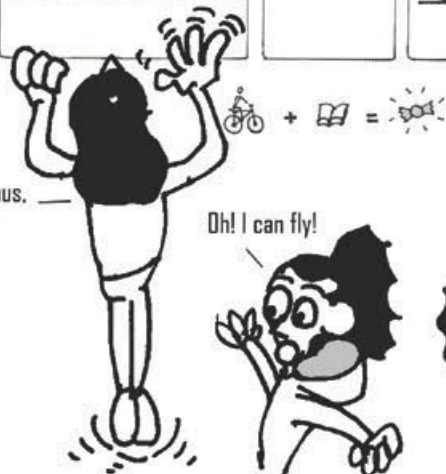


Later on, I "discover" or actually, I confirmed that I am a night person. I read some articles and research, and it is scientifically proven that some people (about 10% of population) have a night chronotype, which is related with the circadian rhythms, like a biological clock of each person. This clock usually coincides with the 24 hour of a day, but for night people it is a bit longer. Bad thing, you sleep too much. Good thing, ones you are awake you can last awake longer. I guess that's why I like to work all-nighter. Another common characteristic is that we suffer of social jet lag.

Turning off, falling asleep is another challenge, so now days, around every two weeks I test different techniques to fall asleep, so far: meditation, wine, lucid dreaming (this is a tough one) running and working out more than usual, and the new one to come is cold shower.



Boo...!! hey, hey I am your subconscious, this is a lucid dream... wake up...!



Oh! I can fly!

Oh, sure. That was a dream. And actually, this is a comic.



Which is — actually fun!



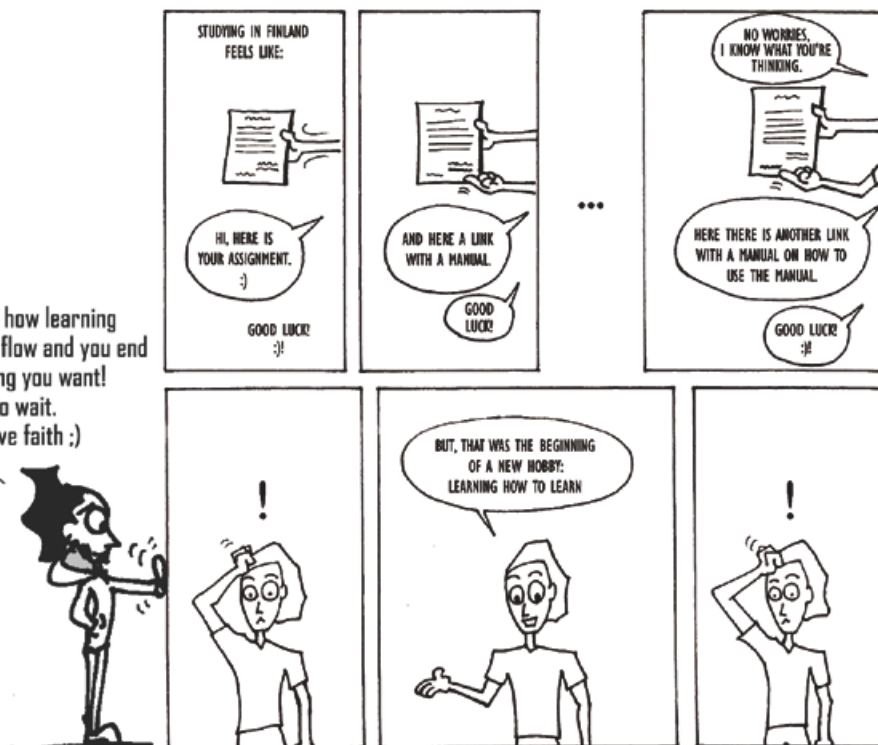
Anyways, none of these are excuses (and there are people with more serious challenges). So, I am working on how to manage this personality trait.

This is the story about how I got into metalearning, a new passion of mine. Which it is approached in this thesis under the topic of metacognition. It is also interesting to see how ideas flew and flow through time. From a comic to a real-life passion and from a passion to a thesis.

LEARNING ADVENTURES #02
INDEPENDENT LEARNING

It feels a bit weird though, to talk about my comic all the time. It feels like talking with myself, but it is also fun! I notice this is a bit egocentric also (ha, ha). Now I know why an author called *narcissistic narrative* to metafiction narrative. Anyways, to balance things up in a future comic I will include other people.

Yeah, struggle! That's how learning begins. Then you get into flow and you end up learning everything you want! You just need to wait. Be calmed and have faith ;)



About being egocentric. This is another personality trait of me. I am a person of inner reference. Which looking backwards it is obvious, since I left my country, my language, my family, my career and I am happy in my own self-discovery journey! and daah... I am an only child.



Finally, something productive about talking with myself.

LEARNING ADVENTURES #03 FOCUSED



The joke in this comic is an exaggeration. In a way, I think this example represents the Finnish mentality. Focused, polite, truthful and direct. Which in this case is expressed in the absence of greetings or small talk.



Although, I am making fun of it in this comic. I truly admire these attributes. Actually, this is one of the reasons (between many) why I preferred to study a master in Finland, rather than in a Latin European country (e.g., Spain), because I could easily get distracted.



Me getting distracted by saying hi for no reason at all.

A Finn being polite

A Finn being direct and truthful

An example of:



But, no worries. I had figured out some strategic places to talk. Basically, social places, like a kitchen and so on. So, you can get distracted in an organized way (so smart!)



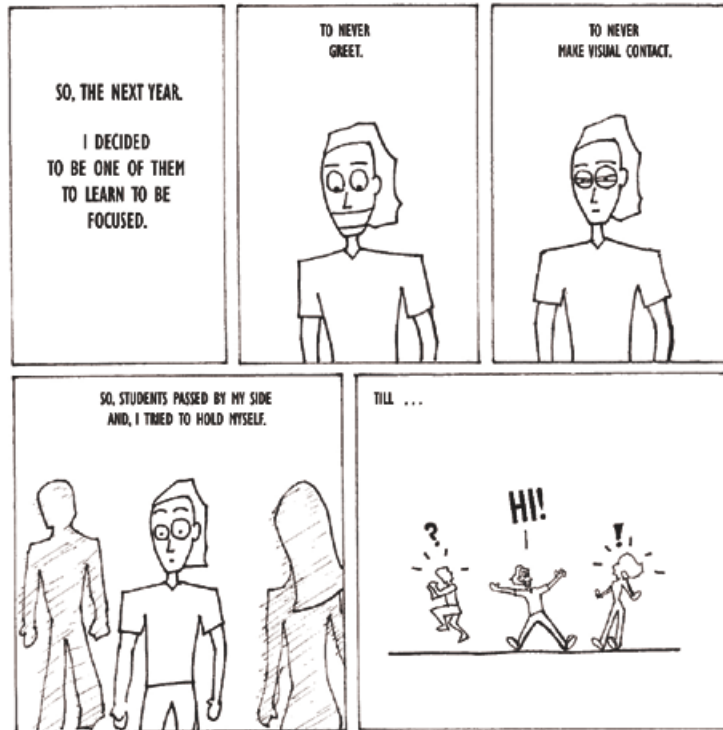
Here I continue the joke as it was something to be published in a daily newspaper :)!
(my dream! ... maybe I should give it a try)

Well I tried my best. But in the end of the day, I think it is also about accepting yourself. Now, the way I manage concentration is: first thing on the day is focus mode, no social media, no anything.
Then, when I finish my daily duties, I allow myself to socialize.

LEARNING ADVENTURES #03.1 LEARNING TO "WALK FOCUSED"

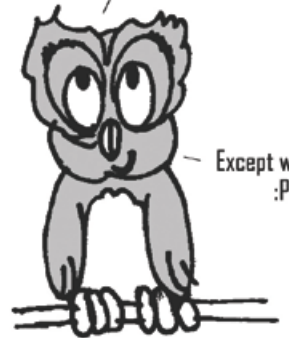


"Next year". Such a jump of time, this can only happen in a comic!



Pretty simple. Although in practice it is not always easy to follow, but I am much better than before.

Working at night also helps!
Since there is no one to talk with.



Except with me :P

COMIC: DISCOVERING YOUR SUPERPOWERS



By Luis Bellido

WORK
STRONG
LIKE
HULK



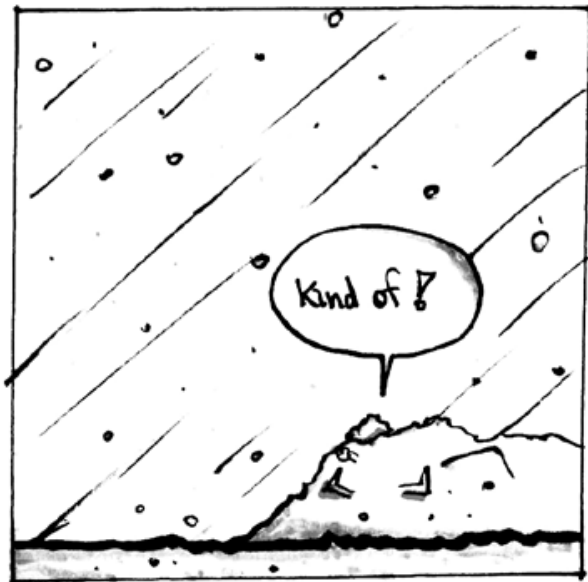
HEAL
LIKE
WOLVERINE



WORK
ALL NIGHT LONG
LIKE
BATMAN



BECOME
SNOW PROOF
LIKE
ICE-MAN



RUN
SUPER FAST
LIKE THE FLASH



SO FAST THAT
YOU GO TO ANOTHER
REALITY



EVERYTHING YOU DO
TO DISCOVER
YOUR SUPER POWERS



ANYHOW
—
THAT WAS THE BEGINNING
OF
...



5.4.2017



METACOMIC OF DISCOVERING YOUR SUPERPOWERS



I did this comic to add some fictional energy to my life in a challenging time. I got a job delivering newspapers at night (which I really needed to finance my life). In the beginning, I was a little bit ashamed, but I overcame that quickly since there are many foreigners and also local students that have non-professional jobs while studying.



This, by the way, is something I always wanted to do. Since in Peru you never get these jobs, because you live with your parents all your life until you get married or in my case travel to the other side to the planet!

The way I design this comic was using a comic method I like to call Problem Solving Comics. Which consists on turning a problem into a solution. In addition to that, by that time I was also thinking in the idea of "discovering your super powers", which actually refers to discovering one's own unique attributes. In this case, I took the inspiration of superhero genre. I was asking myself what could it be my superhero or superpower? But, I couldn't decide for only one superpower or hero.

Finally, combining these two ideas I turned each difficulty in the job into a superpower and related them with a known fictional superhero (from American comics companies Marvel and D.C.)



YOU REALIZE
YOU HAVE
SUPER POWERS
WHEN YOU:

WORK
STRONG
LIKE
HULK



HEAL
LIKE
WOLVERINE



Is going to be Ok



I know it because
I come from the future

damn! that's what its called
metafictional superpowers!



Working at night was ok for me
(confirming again that I am a night person)



Hey! Are you
taking instead of

you are going to confuse the audience
(which is actually myself,
so never mind!)

But! it was physically challenging,
especially in the first two months.

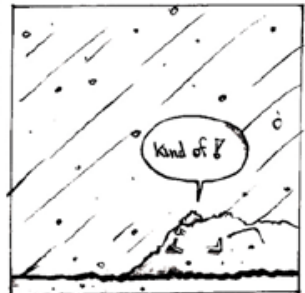
DMG! My other self
got the shape of an owl :o!



WORK
ALL NIGHT LONG
LIKE
BATMAN



BECOME
SNOW PROOF
LIKE
ICE-MAN



RUN
SUPER FAST
LIKE THE FLASH



HEAL
LIKE
WOLVERINE



Then I easily notice that these "powers" were
related with my personality traits. Such as:

Working at night, like Batman, —
related with being a night person
About Iceman, well I am into avanto and ice
swimming; I guess water is my "element"
Working fast, like Flash, related with a sprint



I love personality traits!



Ultimately I think this
makes you stronger.

About working
strong as Hulk
and healing fast
as Wolverine. I
don't have any
personality type
related with that
(perhaps being a
sprint could apply
here as well), but
I got a lot of inju-
res in the job and
recover from all



In the end, I actually came up with a superhero. Which was inspired in the name of the job itself. It was pure fantasy, but now that I see it, I could interpret it as if it was the story of the superhero of my own life.
An uplifting way to see your life I guess :)




5.4.2017

5. INTERPRETATION

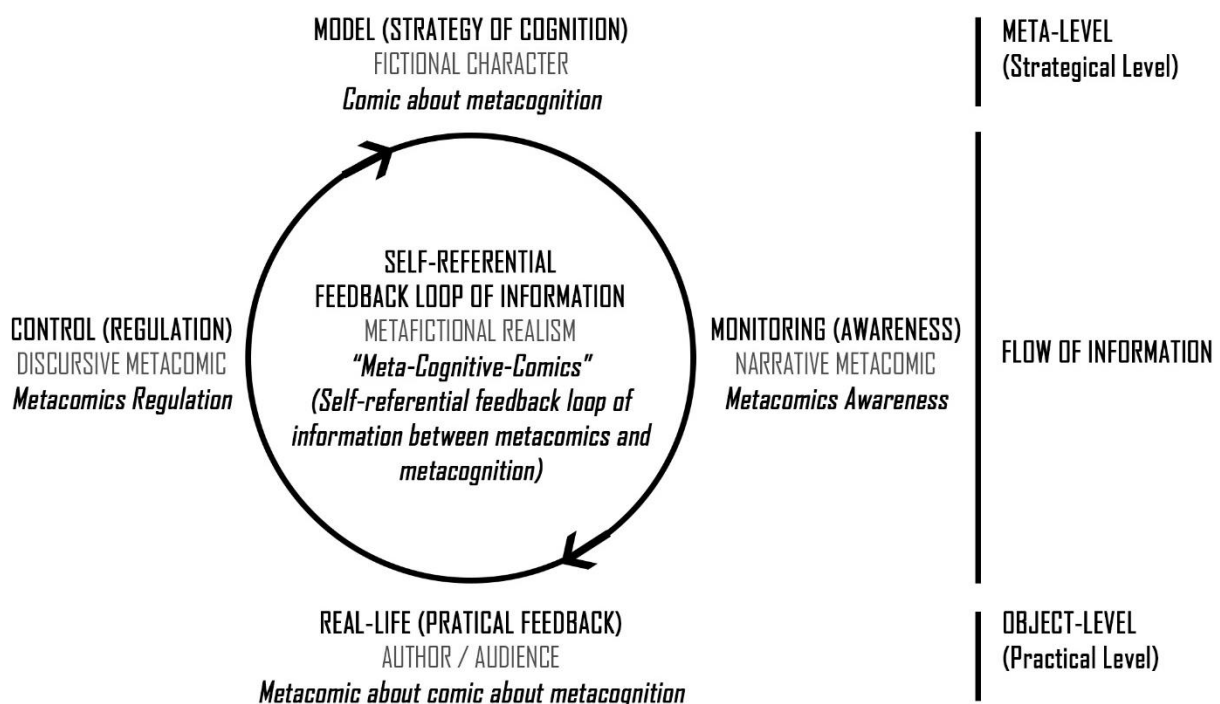
This chapter is based on ABR (Leavy, 2017b) and CBR (Kuttner, Sousanis, Weaver-Hightower, 2017) as a methodological framework. In this research, these approaches are used to focus on a theoretical exploration and not on the validation of the artistic quality of the comics. I used the holistic characteristic of ABR via the combination of concepts of art, metacomics, and concepts of education, metacognition. The aesthetic quality of the works focused on being evocative to myself to be able to explore the research question. In addition, I used the CBR approach to focus on the understanding and application of theoretical principles of metacomics.

The purpose of this chapter is to investigate the research question: How might metacognition be explored via metacomics? In order to address this question, first, I explore an apparent analogy of the concepts metacognition and metacomics using Nelson's model of metacognition (1996). Then, I investigate how the components of *awareness* and *regulation* in metacognition might be explored via metacomics. Finally, based on a comparative analysis I suggest for discussion a possible model that I called *meta-cognitive-comics*, and I include the suggestion of its respective components, *metacomics awareness* and *metacomics regulation*. The aim of this model is to explore metacognition via metacomics and my suggestion that metacomics might contribute to the exploration of metacognition. For these purposes, I elaborated a comparative analysis with a graph (see graph 1) and a table (see table 1), and I illustrate this analysis using two approaches of metacomics from the case study, narrative and discursive metacomics.

Both models are self-referential and use a feedback loop of information; however, one is applied to a cognitive goal and the other one is applied to connect fiction with reality. For example, metacognition uses a self-referential model with a feedback loop of information, between a learning strategy and real-life practice, in order to increase a cognitive or learning

process (Brown, 1977; Flavell, 1979; Nelson, 1996). Similarly, metacomics uses a self-referential model with a feedback loop, in this case between a fictional character and a real-life author or audience, in order increase an effect of realism (Gass, 1970; Alter, 1978; Gonzales, 2014). Gonzales (Ibid) called this effect *metafictional realism*. The comparison of both models is illustrated in a graphic using Nelson’s metacognitive model (see figure 1 [Nelson, 1996]). I used Nelson’s model because it unifies the definition and components of metacognition in a single model. This model uses two levels, a meta-level and an object-level. As it can be seen in the graph 1, Nelson uses the term *control* to refer to the regulation component, the term *monitoring* to refer to the awareness component and the term *flow of information* as equivalent to the feedback loop of information. Then, the flow of information between the two levels is analogous to that of a self-referential model.

COMPARISON OF METACOGNITION AND METACOMICS IN NELSON’S MODEL
AND SUGGESTION OF MODEL *META-COGNITIVE-COMICS*



GRAPH 1:

MODEL OF METACOGNITION in capital letters and bold. Information from: Nelson, 1996. **COMPONENTS OF METACOGNITION**, information from: Brown, 1977; Flavell, 1979;

CONCEPTS OF METACOMICS in capital letters and grey. Information from: Gass, 1970; Alter, 1978; Gonzales, 2014.

Suggestion of model: "Meta-Cognitive-Comics" in lowercase, italics and bold. Information suggested by author of thesis: Bellido, 2018.

Based on the comparison of metacognition and metacomics in Nelson's model, it could be suggested that metacomics allows the exploration of metacognition. For example, a flow of information in metacognition could be fostered via a flow of metafiction (also called metafictional realism) because both connect a meta-level with an object-level. In the case of metacognition, it connects a strategy of cognition (meta-level) with real-life feedback (object-level). In the case of metacomics, it connects a fictional character (meta-level) with a real-life author or audience (object-level). I use the case study *Metacomics of learning adventures* to illustrate this suggestion. For example, if a metacognitive goal is to become aware of my personality traits, then it is beneficial when the character made a comment realizing, that he was a night person (see image 1). This realization was reiterated several times; for example, with the apparition of a new character, a night owl, a character that represents my night personality (see image 2). It is important to notice that, when I did this metacomic, I did not plan to talk about this personality trait, I didn't have any preconceived goal other than to explore the metacomics techniques. This example might suggest that it is possible to get metacognitive feedback via metacomics.

Awareness of night personality trait

Later on, I "discover" or actually, I confirmed that I am a night person. I read some articles and research, and it is scientifically proven that some people (about 10% of population) have a night chronotype, which is related with the circadian rhythms, like a biological clock of each person. This clock usually coincides with the 24 hour of a day, but for night people it is a bit longer. Bad thing, you sleep too much. Good thing, ones you are awake you can last awake longer. I guess that's why I like to work all-nighter. Another common characteristic is that we suffer of social jet lag.



Image 1

Apparition of a character: night owl

Working at night also helps!
Since there is no one to talk with.

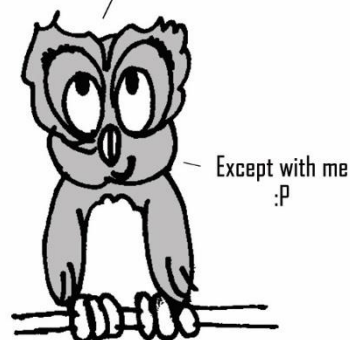


Image 2

Now I turn towards investigating how the components of awareness and regulation in metacognition might be explored via metacomics. For this purpose, I had utilized two approaches in the case study: *Narrative metacomics*, which refers to a comic aware of its fictional condition (Gonzales, 2014) and *discursive metacomics*, which involves a comic that controls its fictional condition (Ibid). As it can be seen, the definitions of narrative metacomics and discursive metacomics might be analogous to the components of metacognitive awareness and metacognitive regulation (control). I elaborated a table (see table 1) to show a comparative analysis of the definitions and components of both concepts.

	APPROACH 1	APPROACH 2
METACOMICS	Narrative metacomics: awareness of fiction	Discursive metacomics: control of fiction
METACOGNITION	Awareness of cognition	Regulation of cognition
COMPONENTS	Awareness	Regulation (Control)
MODEL	Self-referential between awareness and real-life feedback in cognition	Self-referential between real-life author and fictional character
CASE STUDY WORKS	Tracking Time Management	
		Learning Adventures
		Discovering your Superpowers

TABLE 1:
 MODEL OF METACOGNITION Information from: Nelson, 1996.
 COMPONENTS OF METACOGNITION, information from: Brown, 1977; Flavell, 1979;
 CONCEPTS OF METACOMICS Information from: Gass, 1970; Alter, 1978; Gonzales, 2014.

First, I examine the component of awareness. For that aim, I study the metacomics work *Metacomics of tracking time management*. In this example, as described before, the metacomic used the technique of narrative metacomic, where a comic is *aware* of its fictional nature (Gonzales, 2017). I suggest the term *metacomics awareness* to use a more direct reference to its definition, a self-aware comic. This term refers to the similar component of awareness in both, metacognition and metacomics. In this metacomic, *Metacomics of tracking time management*, the character utilized a common feature of narrative metacomics, a *comic-within-the-comic* device, which is a comic that talks about another comic (Gonzales, 2017). It uses

this device when he is explaining and making comments about another comic. Here the comic is aware, although it does not take further advantage of this awareness, for example, he does not interact with another character or with the author or audience.

In detail, in this work my character made a retrospective reflection of a previous comic drawn six months before. This previous comic was about how he coped with time management issues. The character first made a compelling introduction to the comic's theme and explained why he chose the topic. Then, he selected a comic, *Late in recovery*, and located it in a timeline. Last, he explained the making process of the comic, showing original ideas and drawing drafts, and making reflections upon the mentioned comic (see image 7). As it can be seen in this example, the awareness component is expressed when the character is aware of the other comic via making reflections; although he does not take further control or interaction, in a way he is an spectator.

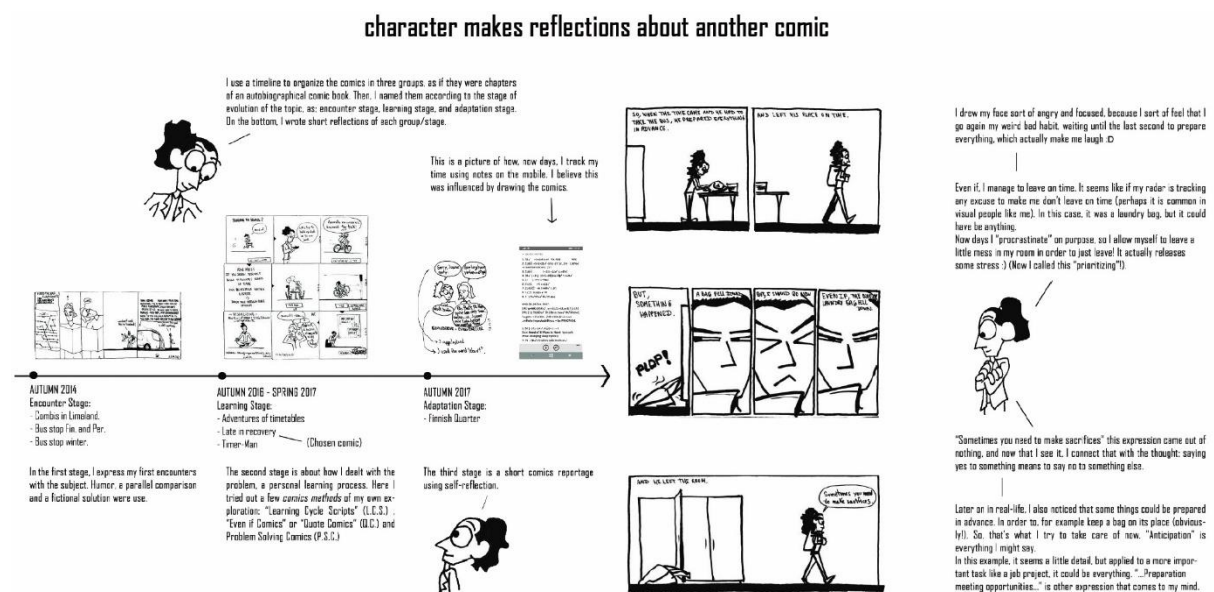
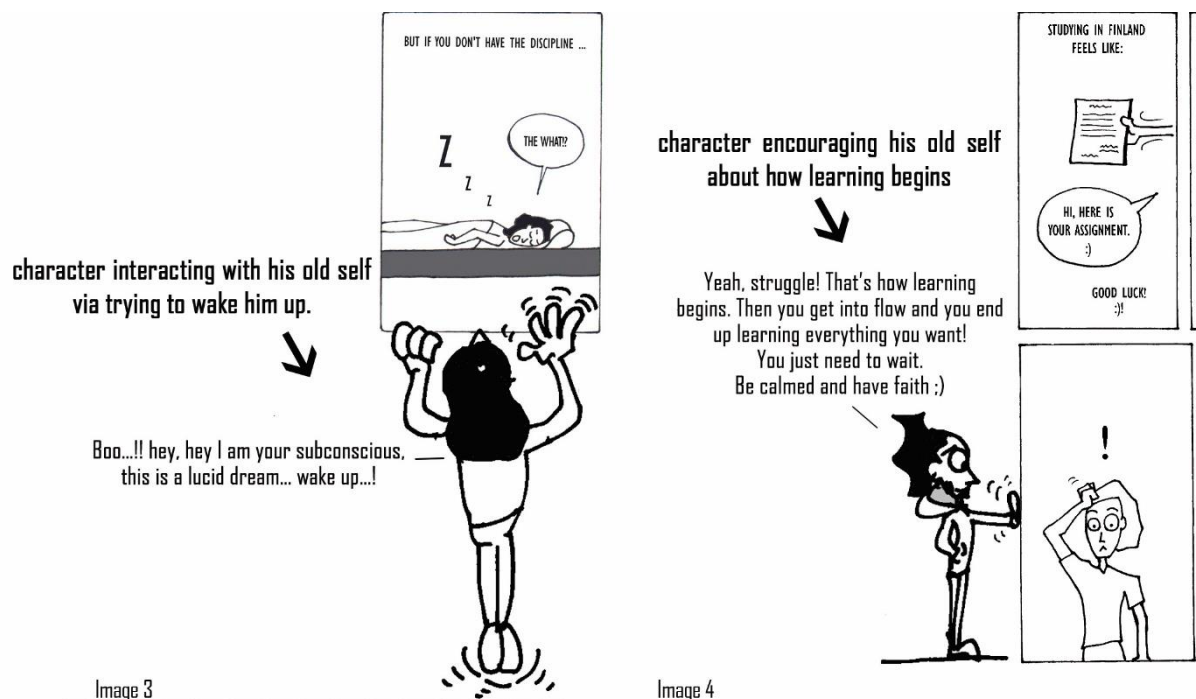


Image 7

Now I examine the component of regulation, also called control. For that purpose, I analyze the metacomics works *Metacomics of leaning adventures* and *Metacomics of*

Discovering your super powers. In these cases, as explained before, the metacomics utilized the technique of discursive metacomic, where a comic is not only aware but also takes control of its fictional condition via interacting with the author or audience (Gonzales, 2017). I suggest the term *metacomics regulation* to link the component of regulation or control in metacognition with the characteristic of interaction or control in metacomics. I preferred the term regulation to evoke a combination of control and interaction, ultimately my purpose is to empower the regulation or management of cognitive goals.

To elaborate on this component I present a selection of two examples from several of the case study. The first example is from in the *Metacomics of leaning adventures*, here the character was interacting with his old self, the character from the other comic, when he is trying to wake him up (see image 3). Other example can be seen in the metacomics about *Learning adventures #02*, here the character was encouraging his old self about how learning begins (see image 4).



The second example can be seen in the *Metacomics of Discovering your super powers* (see image 5) here the character is also encouraging his old character. In addition, they talk

between each other and then the character looks at the audience, which is also myself as author of the comic. This interaction between the character and me was subtle but personally evocative and created a special subjective relationship between the character and myself. Finally, this interaction between myself, as author, and the character became exaggerated when appeared a second character, a night owl. A flow of conversation occurred between the two characters and myself, where they talk between each other and to myself in a peculiar and evocative combination of reality and fiction (see image 6). This situation felt weird and an even humoristic. It is important to notice that the insinuation of the character (image 5) talking with me as author (and not with a general audience) occurred one page before the second example (image 6), for that reason in the second page I felt more related with the characters, because I “knew” they were talking with me. In addition, I also note that this situations were not planned and ironically I felt like an spectator when I was exploring a metafictional device that was supposed to foster control or regulation.

As these examples showed, the regulation component was illustrated when the character is interacting with the character of the other comic and with myself as author. This was specially expressed when my character is encouraging his old self. However, the character

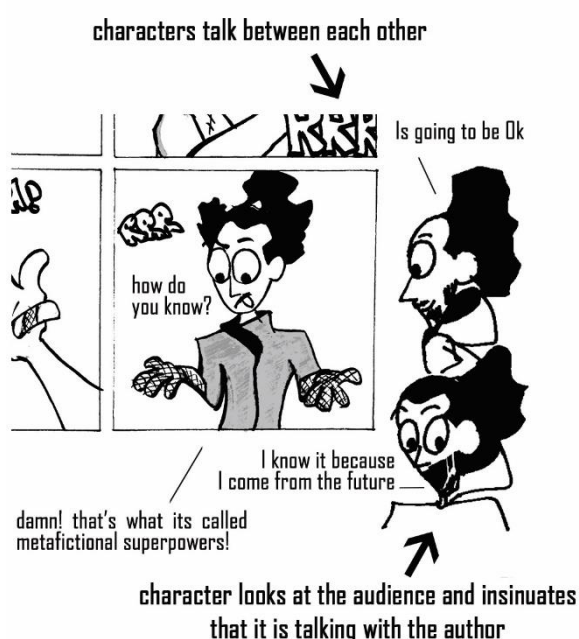


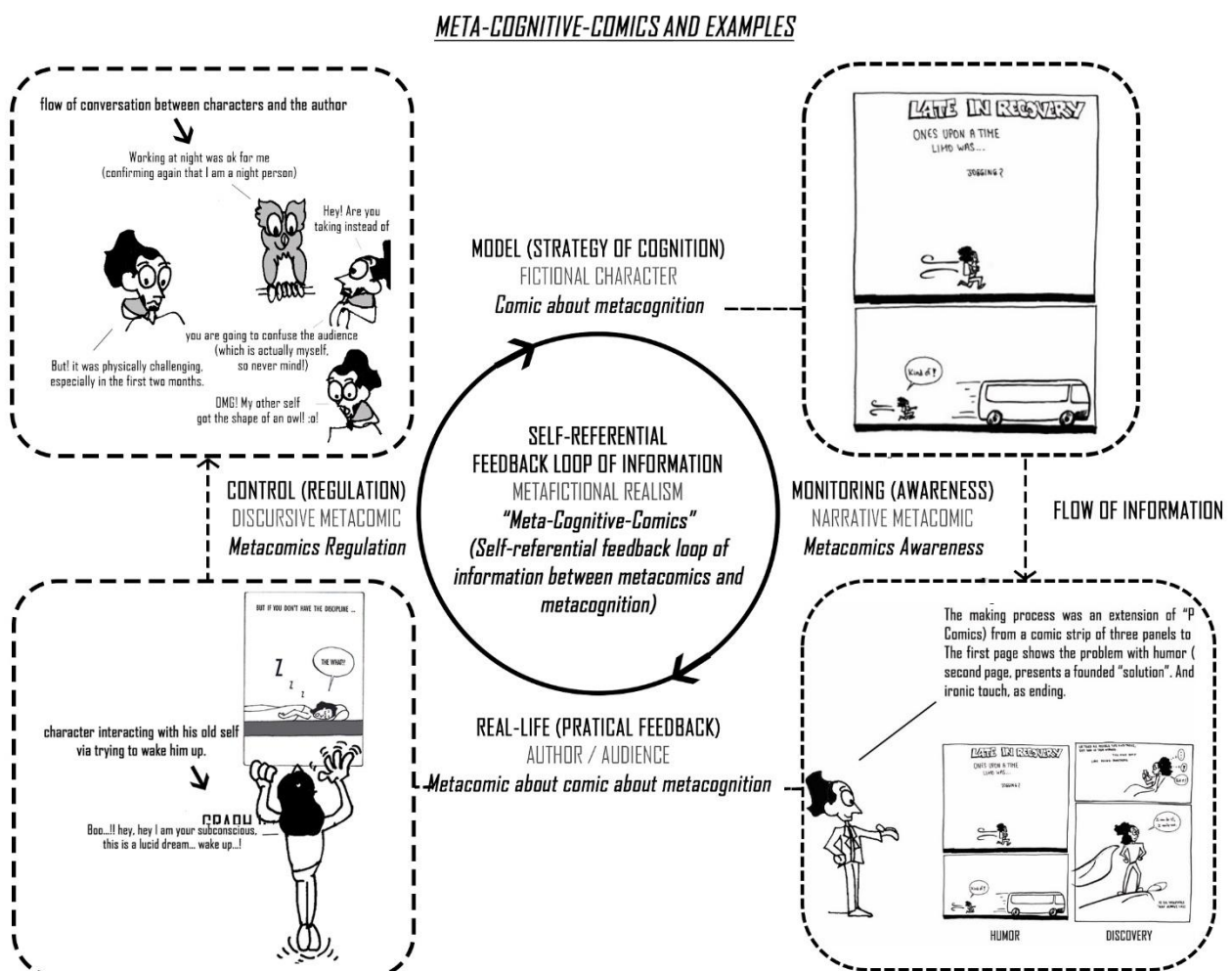
Image 5



Image 6

interacts, he does not control, for example changing the story of the comic. Changing the story of a comic is also a characteristic of discursive metacomics. This characteristic did not happened to me naturally when I was making the metacomic; therefore, this is a feature to be explored in a future research.

Finally, based on the explained analysis I suggest for discussion a possible model that I named *meta-cognitive-comics*. The aim of this model is to explore metacognition via metacomics. In addition, I suggest the components, *metacomics awareness* and *metacomics regulation* (see graph 1). This model combines the concepts of metacognition and metacomics using as a reference Nelson's metacognitive model (1996). The model might consist of a flow



GRAPH 2

MODEL OF METACOGNITION in capital letters and bold. Information from: Nelson, 1996. **COMPONENTS OF METACOGNITION**, information from: Brown, 1977; Flavell, 1979;

CONCEPTS OF METACOMICS in capital letters, italics and grey. Information from: Gass, 1970; Alter, 1978; Gonzales, 2014.

Suggestion of model: "Meta-Cognitive-Comics" in lowercase, italics and bold. Information suggested by author of thesis: Bellido, 2018.

of information between metacognition and metacomics in a scheme with two levels, a meta-level and an object-level. The model aims to foster a feedback loop between metacognition and metacomics. In detail, the meta-level might consist of a fictional character talking about a strategy of metacognition or cognition (for example, a comic about metacognition) and the object-level might consist of a real-life feedback of an author or audience (for instance, a metacomic about the previous comic). In the graph 2, I illustrated the suggested model with the examples about metacomics awareness and metacomics regulation explained previously. The final purpose of the model is to investigate the research question, How might metacognition be explored via metacomics?

6. CONCLUSION

In this chapter, I summarize and make reflections on the initial motivations of the thesis and the research process, which includes the theoretical framework, methodology, case study, and interpretation. Then, I contemplate the limitations of this thesis and make suggestions for future research. After that, I elaborate on personal implications for my future studies. Finally, I reflect on the potential contribution of exploring metacognition via metacomics with concerning myself, people in a similar situation, and the field of art education and education in general.

The motivation for this thesis started in Lima, Peru, with the poor perform of Peruvian education in the Programme for International Student Assessment (PISA, 2012). This event that inspired me to shift my approach of contribution to society from architecture to a social and educational perspective, expand my professional expertise and study a master's degree in art education in the Nordic countries, and explore the Finnish education system as a reference of pedagogical excellence. These initial motivations became a reality when I studied the master's program Nordic Visual Studies and Art Education (NoVA) and lived in Finland, and the Nordic countries, from 2014 to 2017. Personally, my experiences in adapting myself to the Finnish education system constituted the most challenging and transformative experience that I had in my life so far. These experiences concerned not only my adaptation to the academic system but also a cultural encounter in general.

As I explained in the *Theoretical framework* chapter, this research is based on the concepts of metacognition and metacomics. Metacognition involves the process of awareness and regulation of one's own cognition and learning (Flavell, 1976; Brown, 1977). I chose this concept because it helped me to be more proactive and manage the limitations of my educational background, such as organization and time management. Metacomics is a form of comics that is aware and takes control of its fictional condition (Alter, 1978; Gonzales, 2014).

I chose this type of comic because I believe its characteristics are analogous to metacognition and they could potentially contribute to metacognition. This conceptual framework led to the research question: How might metacognition be explored via metacomics? The Theoretical framework helped me to gain deep knowledge on the topics that I am very interested in, such as metacognition and metacomics. With metacognition, I discovered the emphasis on being aware and regulating my own processes of cognition and learning, and in general any experience. In practical terms, it made myself be conscious of the practice of daily tracking, for example using a journal, where I plan, report and review everything that I do from learning targets to life goals in general. With metacomics, I discovered a type of comic that, in my way of seeing, it might be a purposeful and engaging way to explore personal experiences concerning cognition, learning or any other activity.

In the *Methodology* chapter, I elaborated on art-based research (ABR) as the main method of investigation and comics-based research (CBR) as the subordinate method. I chose ABR because it helped me to evoke and investigate my transformative and metacognitive experiences (Chilton & Leavy, 2014) and because its holistic approach (Leavy, 2017b) allowed me to combine concepts from the field of education, metacognition, and from the field of art, metacomics, and to use a case study based on comics for the investigation. Based on ABR (Ibid), in this study, the aesthetic quality of the comics was de-emphasized because the goal of the artistic skills was to express my experiences in an enough resonant manner to myself and to be able to investigate the research question. The subordinate method of CBR helped me to explore metacomics as a research tool part of ABR (Kuttner, Sousanis, Weaver-Hightower, 2017). Ffor example, It allowed me to produce the content for the case study and to focus on applying the conceptual principles metacomics, rather than on the quality of the drawings. In the beginning, I was hesitant about using ABR as a method, because in my background in architecture there is a load of quantitative data in a research process; therefore,

the idea of using art as a research tool constituted a challenge. However, ABR and CBR was an opportunity to explore a new type of methodology and to learn new skills. In practice, it was rewarding to have been able to use my own comics and, later, metacomics as the case study for the thesis.

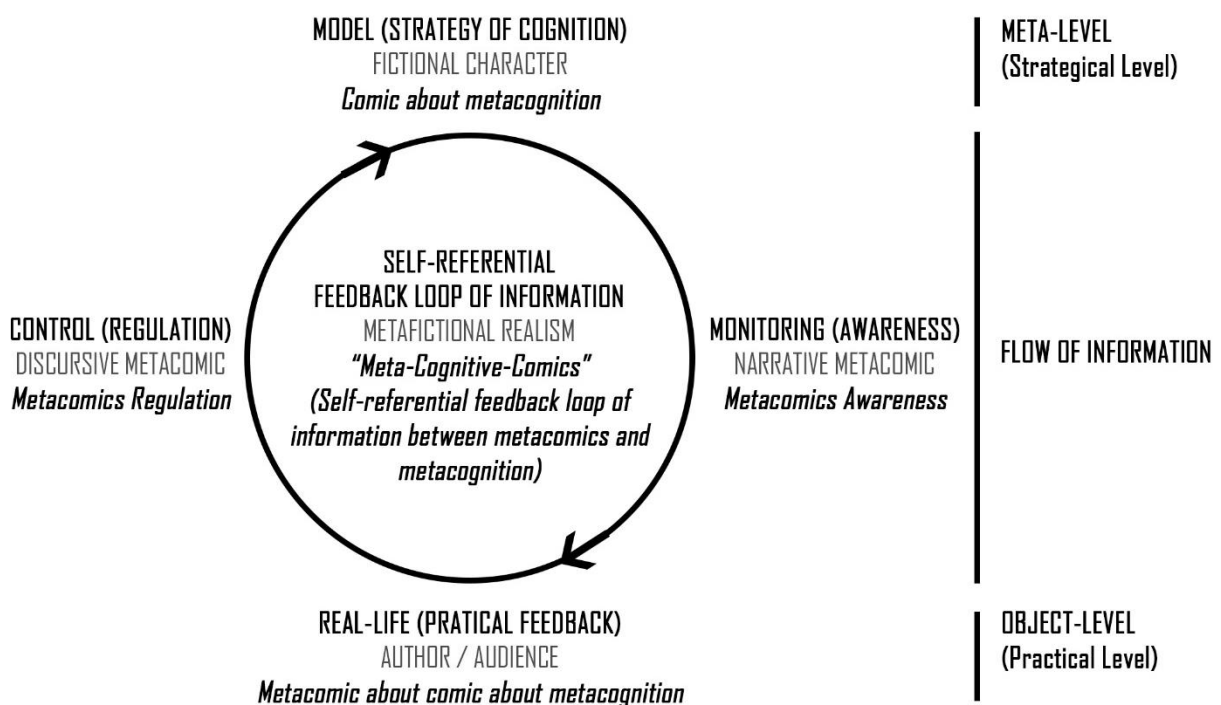
In the chapter *Case study: Meta-Limo*, I provided the data for this thesis. This data consisted of a collection of pairs of comics and metacomics, which were grouped under three topics: *Tracking time management*, *Learning adventures* and *Discovering your superpowers*. The case study was an opportunity, not only to investigate my personal experiences but also to apply in practice the theoretical framework, drawing metacomics about my experiences drawn in previous comics.

In the *Interpretations* chapter, I examined the research question: how might metacognition be explored via metacomics? For that aim, I made a comparative analysis of the concepts of metacognition and metacomics, where I concentrated on an apparent analogy of their definitions and components. I utilized examples from the case study using two approaches of metacomics, *narrative* and *discursive* metacomics. Using these examples, I aimed to illustrate the analogy of the components of *awareness* and *regulation* in metacognition and metacomics (See graph 1).

The main finding is that both concepts, metacognition and metacomics, are based on an analogous model, a model that consists of a self-referential loop of information. Metacognition uses this model for a cognitive purpose, for example, to connect a strategy of cognition with real-life feedback, while metacomics uses the model to connect fiction with reality, for example, a fictional character with a real-life author or audience. Drawing on this analogy, I suggest for discussion that metacomics might contribute to metacognition. To elaborate on this suggestion, I combine the concepts of metacognition and metacomics in Nelsons' metacognitive scheme (1996) and suggest a model that I named *meta-cognitive-*

comics. The aim of this model is to investigate the question of: how might metacognition be explored via metacomics? In addition, I propose its components terms *metacomics awareness* and *metacomics regulation*. Similarly, to the model explained above, meta-cognitive-comics might consist of a model with a self-referential loop of information, but in this case, it connects metacomics with metacognition. For example, the model might connect a comic about metacognition with a metacomic that reflects about the mentioned comic, creating in this way a metacomic about a metacognitive comic (the suggestion I more explanatory in the graph 1 below). Then, the proposed components, metacomics awareness refers to a metacomic that evokes metacognitive awareness, and metacomics regulation refers to a metacomic that evokes metacognitive regulation. However, this is my first attempt and the research needs further development. The model of meta-cognitive-comics is a suggestion of how to explore the possible contribution of metacomics to metacognition.

COMPARISON OF METACOGNITION AND METACOMICS IN NELSON'S MODEL
AND SUGGESTION OF MODEL *META-COGNITIVE-COMICS*



GRAPH I:

MODEL OF METACOGNITION in capital letters and bold. Information from: Nelson, 1996. **COMPONENTS OF METACOGNITION**, information from: Brown, 1977; Flavell, 1979;

CONCEPTS OF METACOMICS in capital letters and grey. Information from: Gass, 1970; Alter, 1978; Gonzales, 2014.

Suggestion of model: “Meta-Cognitive-Comics” in lowercase, italics and bold. Information suggested by author of thesis: Bellido, 2018.

Based on the findings and the model of meta-cognitive-comics explained above, I believe that metacomics might contribute to metacognition. From a personal point of view, I am satisfied with the proposed model. However, this suggestion was developed under the scope of an ABR, and it has an exploratory purpose, for which this finding should be taken as a personal and exploratory conclusion, rather than as a statement to generalize. The study is also limited to an individual case study, which at the same time uses my personal experiences as data; therefore, I acknowledge the possible bias as a researcher involved in the study.

The main limitation of this thesis is that it involves a case study with an individual and autobiographical approach; therefore, future studies could imply a non-autobiographical and participatory approach. For example, it could include workshops with pupils of different ages and cultural backgrounds. Another limitation is that the case study is based on a number of events that impressed me and independent learning initiatives, where the concept of metacognition came after the research; therefore, future studies could utilize direct and preconceived metacognitive strategies in their research process.

With regard to my future studies, the research process of this thesis allowed me to experience the work as a researcher in a master's degree level. I would like to continue investigating the concept of metacognition in a practical way, for example in an educational institution and with a personal initiative. Personally, I also would like to explore the application of metacognition in other areas, such as my former field of architecture and the recreational field of sports.

Finally, I elaborate on the significance of this thesis with concern to myself, people in a similar, and the field of art education and education in general. The study was meaningful to myself because after I explored my experiences under the lens of metacognition and metacomics, I agree with the definition of metacognition as a process that helps people to be aware and regulate their own cognitive and learning outcomes. In my case, metacognition

helped me to manage my academic limitations and to adapt to the Finnish education system (however, this is an ongoing process), and metacomics helped me to gather and explore these experiences in a creative way. The study could be beneficial for other people who have similar experiences, such as international students, immigrants or foreigners studying and living in Finland. It could help them to be more proactive in their learning processes when adapting to the Finnish academic system. However further studies are needed it, this research could contribute to art education, and in general to the field of education, because the findings suggest that metacomics could contribute to metacognition. For example, the suggested model could be used in educating youth through art, comics, to develop metacognitive skills. In a broader sense, this study could contribute to approach educational issues in Finland and other countries. For example, metacognition via metacomics could be explored in developing countries in need of educational initiatives or in Finland to tackle current intercultural challenges regarding immigration.

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